

BUS TRANSPORT IN REBUILT BRISTOL

See Page 3



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NEW POLICY ANNOUNCED FOR C.I.E.

See Page 9

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Renationalisation—an Alternative

RELIABLE indications of the outcome of Socialist thinking on the subject of renationalisation of road transport are as far away as ever. In the meantime, Mr. Ernest Davies, chairman of the party's parliamentary transport group, has obliged with a further, and strictly personal, variation upon his already-expressed views. He came out last week with a proposal that British Road Services should acquire, by either voluntary negotiation or by compulsory process, only those haulage businesses which it thinks would assist in the effective operation of trunk and general haulage throughout the country. Those who were not thus liquidated would be put on the leash and kept on iron rations fed them by B.R.S. The latter would become a gigantic clearing house, to which all long-distance road traffic must be offered, dispensing traffic it did not particularly want at predetermined rates. A solution on these lines will appeal to no one. It presents a facade of competition in spirit only, and of flexibility maybe, but in practice the independent haulier would suffer the thick end of the stick, especially at lean periods. Also, it would be a remarkable system that precluded evasions. It may be that Mr. Davies is sensitive to the disinclination of British Road Services to venture forth again into random acquisitions. Of course, it already has power to acquire businesses in the open market, and has done so on more than one occasion. If Mr. Davies concedes that there are some long-distance hauliers whose acquisition is undesirable, it is presumably because they are doing jobs which, in all the circumstances, B.R.S. cannot or does not wish to do—why then subject them to regimentation?

International Shipping

ONE more international body in the field of transport—and their number is legion—is the Inter-governmental Maritime Consultative Organisation. Known shortly as Imco it has been set up by the United Nations and it held its inaugural meeting in London last week when delegates from 24 nations attended. It will be based in London and, satisfactorily, the British Government has been foremost in promoting it. In extending an official welcome to the delegates, the Minister of Transport, Mr. Harold Watkinson, said that shipping could develop its fullest potential in the service of the world only if, by means of international consultation and agreement, the barriers that hamper and constrain the expansion of its full activities are removed. He gave an assurance that the Government would play its full part towards this end, as they would in the wider field of commercial enterprise to facilitate free exchange of goods and services. The purpose of Imco is to advise, not to enforce, and it aims to serve shipping, first by encouraging technical co-operation and safe navigation and second by opposing discrimination and restrictive practices. The new organisation, of which Mr. Ove Nielsen, formerly chief of the shipping department of the Danish Government, has been appointed secretary-general, will no doubt set the seal on progress that has already been made in such matters as standards in the safety of life at sea and securing agreement on restriction of oil pollution. There is a vast field for action in curbing discriminatory and restrictive practices. Given requisite support by Governments there is useful work ahead; may danger to be avoided is that proceedings may become bogged down by politics.

Coal, Oil and the Railways

OUT of the £480 million total gross receipts of British Railways in 1957 coal and coke accounted for well over £126 million, a figure only a million short of the total received from passengers. Their fortunes, therefore, are closely wrapped up in the coal industry. With millions of tons on the ground and the impending closure of the older pits the outlook is bleak. The decline in coal traffic is, of course, partly due to the trade recession, and to that extent is recoverable.

But there are more permanent effects, and the greatest is the growing preference for oil. Sir James Bowman, chairman of the National Coal Board, speaking in London last week, said that about half the reduced demand for coal during the last year was caused by its replacement by oil; because of its convenience and ease of handling oil might indeed become an even more important rival. He estimated that the consumption of oil in fields where coal could be used had increased from the equivalent of 19 million tons of coal in 1956 to 28.3 million tons in 1958. In the iron and steel industry its use had increased by 26.5 per cent in the two years (on the basis of the first eight months of consumption), in engineering by 32 per cent, and in other industry

Although the B.T.C. has certain rights, these vary from waterway to waterway, each being governed by special Acts of Parliament. For the Aire and Calder Navigation, rights stem from Acts of Parliament of 1698 and 1774. These give British Waterways a "right to full support" so that the National Coal Board should at its own cost make good the damage. In other cases the B.T.C. is entitled to pay for support being left for the canal. But it involves, as is pointed out in the current *Waterways*, having a mining engineer on the staff of British Waterways. In the N.E. Division, he is Mr. A. V. Wallace, stationed at Leeds. He deals also with the similar effects of sand and ballast workings near canals and acts in addition as redevelopment officer.

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by 30.3 per cent. In the paper and printing industry it had increased by 66.6 per cent, and in the food, drink and tobacco industries by 50 per cent. He put the total demand for coal in 1959 at 200 million tons. It is obvious that the railways must redouble their efforts to secure more of this vital traffic. Oil is more difficult to attract to rail, and increasing quantities are passing coastwise from refineries to riverside depots for local distribution. But responsible men in the oil companies have shown themselves anxious and willing to use rail for trunk hauls, and it is for the railways to reciprocate this goodwill by convincingly low rates. Many other traffics would respond to similar attraction.

Coal under Canals

WHEN coal is mined, by other than pillar-and-stall methods, the surface of the earth drops. It does not subside quite to the extent of the thickness of the seam of coal taken out. But a seam may be several feet thick, and there may be a number on top of each other so the drop in the level of the surface can be serious. Seams below the waterways in the Swinton district add up to a thickness of 45 ft., near Barnsley to 38 ft., and near Doncaster to 36 ft. Damage to railways is serious enough, but on canals it might take the form of lowering the banks; breaking up the clay seal followed by leaks, and perhaps, burst banks; lowering the water level control-points such as locks and weirs; lowering bridges which cross the waterways, so reducing headroom; disturbance of locks and distortion of walls, gates and the like; damage to reservoir embankments resulting in the drainage of reservoirs and feeders, reducing or cutting off water supplies; and damage to aqueducts. At Monk Bretton the banks of the canal have had to be raised 21 ft. over a period of years to cope with subsidence. Work will soon start to combat a further fall of land at Mexborough Low Lock, where the level has changed 8 ft. 6 in. since 1913.

Motor Industry Standards

CONCLUSIONS drawn by Mr. E. Woodbridge in a paper on standards and standardisation in the motor industry, presented to the automobile division of the Institution of Mechanical Engineers on January 13, were that there has been a lack of continuity in the preparation of standards and standardisation and lack of appreciation in some quarters of their true function. Mr. Woodbridge, who is standards and technical manager of the Society of Motor Manufacturers and Traders and previously served with the British Standards Institution, outlined the relationship between company standards, industry standards, national standards, international recommendations, research reports and legal requirements. He called attention to the present anomalous situation in which spurious spares that might be dangerous in service apparently had official blessing because they complied with a British Standard. The speaker dealt with the relationship between standards and research and showed how the results of research are embodied in S.M.M.T. standards. He referred to the co-operation of the motor industry, through the British Standards Institution, with the International Organisation for Standardisation and described the work of the Economic Commission for Europe Working Party on the Construction of Vehicles, pointing to the importance of incorporating this body's recommendations, as of national legal requirements, into standards if the British motor industry is to remain effective in overseas markets.

The Yard and the Pound

NATIONAL standards laboratories of Australia, Canada, New Zealand, South Africa, United Kingdom and United States of America have discussed the existing differences between the values assigned to the yard and to the pound avoirdupois in different countries. To secure

identical values for each of these units in precise measurements for science and technology, it has been agreed to adopt an international yard equal to 0.9144 metre and an international pound equal to 0.45359237 kilogramme. It has also been agreed that, unless otherwise required, all non-metric calibrations carried out by these laboratories on and after July 1, 1959, will be made in terms of the international units as now defined. The new international units conform with the recommendations of the Board of Trade Departmental Committee on Weights and Measures Legislation (The Hodgson Committee) but the Board of Trade points out that the units will have no statutory force in the United Kingdom and may not be used for trade purposes, in this country, which will still be governed by the imperial units laid down in the Weights and Measures Act, 1878. As the imperial standard yard is about five parts per million (0.0002 in.) less than the United States yard and is shortening at the rate of over one millionth of an inch per annum, the consequent discrepancies in measurements of length are important in modern precision engineering. The imperial standard pound has diminished by about 7 parts in 10 millions since 1846. It is about 2 parts in 10 millions (0.0014 grain) smaller than the United States and Canadian pounds, which are defined in terms of the very closely safeguarded international prototype kilogramme. Though the discrepancy between pounds is not at present causing any technical difficulty the coexistence of independently defined pounds is unsatisfactory in science and technology. The adoption of the international values of the yard and the pound will be of particular benefit to those concerned with accurate measurements of length and mass for scientific and technological purposes in the British Commonwealth and the United States.

James William Watkins

ONE who gained distinction in war and peace was James Watkins, who died suddenly at his home in Watford last Monday. He was what the Americans would call "a great guy"—honest, steadfast, knowledgeable and companionable. Moreover, from the humblest beginnings he rose to the top of his profession. The son of a country stationmaster, a benevolent railway company allowed him as a youth of 14 to become clerk and general factotum to his father. That was in 1905. A decade later, when experience would have fitted him for the R.O.D., he preferred the hard way and enlisted as a private in the Gloucestershire Regiment. In the Army courage and leadership were his distinguishing characteristics—to stand him in good stead in his subsequent railway career—and he rose to the command of a battalion of another regiment, the Lancashire Fusiliers, with the D.S.O. and M.C. to his credit. The most modest of men, he rarely spoke of his military experiences. But railways were in his blood and, following successive promotion, he served through the years of the last war as divisional superintendent of operation at Derby and later at Crewe. After a brief period as operating superintendent of the London Midland Region, he became in 1951 its executive chief and in 1956 was appointed a member of the British Transport Commission, which gained added strength from his wide knowledge and experience. In the words of Sir Brian Robertson, its chairman, "on British Railways few men could claim to be known personally by so many railwaymen as James Watkins; but he was not only widely known, he was also widely loved and respected. . . . His meteoric rise from a private soldier to battalion commander testified to those qualities of leadership which brought him later to be general manager of the great London Midland Region of British Railways with 150,000 men under him. Like a bell without a flaw his integrity and sincerity rang true at all times. Love of the railways ran in his bloodstream. His sudden death causes real grief to his many friends in the industry and to none more so than his colleagues on the Commission." We are all the poorer from the passing of this fine British railwayman.



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The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

We desire to call the attention of our readers to the fact that Russell Court, 3-16 Woburn Place, London, W.C.1, is our sole London address, and that no connection exists between this newspaper and any other publications bearing somewhat similar titles.

Turnround of Ships

THE comparatively poor turnround of ships in this country has long been a source of anxiety to all concerned—and not least to traders and manufacturers—and strenuous efforts have been made to improve it. Most opportune, therefore, was the paper dealing in this connection with the role of the port authority which was presented to the Institute of Transport in London last Monday by Mr. F. D. Arney, general manager of the Port of Bristol. One of the several postwar bodies appointed by the Government to inquire into labour and other aspects of port working was the working party on shipping turnround, set up in 1948; this happily gave birth to the Ports Efficiency Committee which, by keeping the question under constant notice, has done some useful work. The principal contributory factors attributed by Mr. Arney to slow turnround have been the substantial loss of berthing space due to war damage to the extent of some £30 million and industrial disputes, whilst a further factor is that ships are loading export cargo from this country to a much greater extent than pre-war. He finds that the position today has changed for the better in many respects; war-damaged ports have largely been made good and some £35 million is understood to have been spent above this on port improvements. Recently published statistics show that on average British shipping still spends 50 per cent of its time in port, but the author believes that "making due allowance for changed circumstances ships are now being discharged and loaded as quickly as in prewar days." But is this good enough? Ship design, speed and equipment have all improved in recent years, and shipowners naturally expect port operations to keep in step. There is indeed a fairly widespread impression that the dock industry is reluctant to introduce mechanisation.

Mechanisation

WHILST admitting that progress has been slow the author claims that much has been achieved in the last 10 years and that, by virtue of the part they play in the handling of cargo, the port authorities themselves have provided most of the new equipment, the greatest advance having been made in the handling of bulk cargoes. Heavy duty grabbing cranes linked with hoppers and conveyor belts, he says, are giving outputs of 250 tons a ship an hour on ore cargoes, whilst the grabbing of bulk sugar cargoes, the improved capacity of pneumatic plants for handling such traffic as grain and phosphates, the increasing use of wagon tippers and the higher rate of pumping of bulk liquids are all helping to reduce ships' non-productive time. By comparison, the use of mechanical appliances on general cargo is less spectacular, due no doubt in many cases to the restrictive attitude of labour. Nevertheless many items, such as fork-lift trucks, mobile cranes and portable stackers, are being introduced. Mr. Arney points to the temptation, once a piece of equipment has been provided, to use it on every possible occasion regardless of whether it really speeds up the work or cheapens the cost. Every job, he says, should be carefully analysed and costed; foremen and others in charge of operations should receive instruction on the capabilities of each piece of equipment, how it can best be used and when not to employ

it. Operators of these costly machines should, of course, undergo thorough training, and experience shows that the sole use of a particular machine by one operator breeds care and pride in it.

Discharging and Loading

IN the discharging and loading of ships overlapping or conflicting movements must be avoided and each ship regarded as a complete job in itself. Mr. Arney described the steps taken by the port authority to co-ordinate the many interests involved, including the shipowner or his local agent, master stevedore, master porter, cargo superintendents, rail, road and lighterage requirements, H.M. customs and excise and, not least, dock labour. At the Port of Bristol the dock traffic manager acts as the co-ordinating officer and holds a daily meeting which is attended by all parties affected. A few days before the arrival date ships and their cargoes are given preliminary consideration at these daily meetings and any points of special interest, such as unusual stowage or needed special lifts or rolling stock, are duly noted, more detailed arrangements being agreed on the day before arrival. The author omitted to deal with the equally important procedure connected with the loading of ships, and it is perhaps germane to reiterate an appeal made over two years ago by the Liverpool Conference Lines to exporters inclined to delay deliveries until the last day or two of the receiving period under the erroneous impression that the last goods received would be the first to be discharged. The statement by the Lines pointed out:

The loading of a ship is governed by several considerations, such as the trim of the ship, the space in the various holds allocated for convenient discharge at respective ports and the weight, size and nature of the various consignments. The order in which goods arrive at the loading berth does not regulate the order in which such goods will be loaded into or discharged from the vessel. Unless the deliveries of general cargo booked for a specific ship are evenly spaced over the period during which the vessel is advertised to receive cargo the loading and stowage operations are severely hampered. . . .

Speedy turnround is dependent as much upon the co-operation of the customer as on the efficiency of the operator.

Labour

THE Devlin committee of inquiry, reporting in July, 1956, analysed the average yearly man-days lost through disputes between 1947 and 1955. The figures showed that the port transport industry had been far more disturbed than any other major industry; its average of 3,134 man-days a thousand men was much higher than that in the shipbuilding (890), mining (778) or engineering (162) industries. Since that report was published the attitude of port employees has apparently improved. Mr. Arney agrees that the manual effort of dock labour is by far the most important factor in turnround and points out that little has so far been done to subject dockside operations to work study investigation. Would this be welcomed—or tolerated—by the men? He believes their co-operation could be obtained by proper explanation of the object of such investigations with resultant benefit to themselves and everyone else. He regards the daily assessment of bonus payments as detrimental to good output and suggests a system whereby the total bonus value of the cargo to be discharged or loaded in each hold would be paid as a unit on completion of the work, with adjustments to meet special circumstances; such an arrangement, he thinks, would tend to even out the effect of unavoidable delays. "A hold-up of an hour's duration set against eight hours work can be a considerable disincentive, but set against several days' work it loses its significance," he asserts. "I believe that the men would cease to regard the job on a day-to-day basis and would be more inclined to step up the tempo of work with the object of achieving their bonus payment in the least possible time, so making themselves available for the next job."

Employment and Shift Working

IN his conclusion the author suggested that there are too many ports for the size of the country and that the resultant competition prevents the earning of a margin of profit sufficient to maintain adequate reserves for essential renewals. Two essentials were stressed in the ensuing discussion—first the need for securing for dock workers the principle of the single employer, and, secondly, the need for introducing the two-shift system in ship working. Impeding the first essential is the National Dock Labour Scheme, which is interposed between employer and worker and, although beneficial in some respects, has failed in its object of providing for the weekly engagement of workers. As to the second essential, although there has so far been opposition by dock workers in this country to shift working it is to be noted that the practice is common in most Continental ports. Indeed it is one of the reasons for the speedier turnround there than is usual in British ports.

[Forthcoming Events appear on page 12]

BUS TRANSPORT IN REBUILT BRISTOL

Station for Country Services

REORGANISATION OF CITY ROUTES

THERE have been various changes in the outward appearance of the centre of Bristol in the past thirty years. There was the covering of a further section of the floating harbour following the success of the much earlier endeavour east of the Drawbridge which established Colston Avenue. There was the serious air-raid damage during the 1939-45 war and the withdrawal of the trams, which were followed by the remodelling of Tramways Centre as Centre and, over the past twelve years, there has been the general reconstruction of the city.

One of the newest additions to the postwar buildings is the new bus station of the Bristol Omnibus Co., Limited, in Whitson Street, which was formally opened by the Lord Mayor of Bristol, Alderman F. G. W. Chamberlain, on September 22. As was noted editorially in MODERN TRANSPORT of September 27, the development of the new site around the nucleus provided by the former permanent way depot of the Bristol Tramways and Carriage Co., Limited, has accorded with the growth in the area of a new shopping centre, while the opportunity was taken also to reorganise the city services, operated by the company jointly with Bristol Corporation, so that improved facilities were provided across the centre and to the new shopping areas from the large housing estates on the outskirts of Bristol.

Formal Opening of Bus Station

The station, which was formally opened by the cutting of a tape by the lord mayor at a ceremony presided over by the chairman of the company, Mr. S. Kennedy, who was accompanied by two other directors, Messrs. I. R. Patey (who is also general manager) and C. H. S. Pickett (chairman, Bristol Transport Joint Committee), has been built to deal with the country services. These run into Bristol from all parts of Gloucestershire, Somerset and Wiltshire, the main towns served being Gloucester, Cheltenham, Bath, Weston-super-Mare, Wells, Swindon and Stroud. Out of a fleet of 799 vehicles that deal with this side of the company's operations, 122 are operated from Bristol and are garaged at night, in the main, in the new bus station. The station also caters for the company's group of express services and, through its connection with Associated Motorways, daily services covering the greater part of England.

The city services operated jointly with the Bristol Corporation, requires 500 vehicles housed in eight depots at various strategic points in the city and the reorganisation of services was the most extensive since the tramways were abandoned. Previously the country and out-of-town services were terminating in Bristol at various points around the Centre (St. Augustine's Parade and Broad Quay), the Old Market and Prince Street. Simultaneously with the introduction on September 21 of the reorganised city services, all the out-of-town services began operating to and from the Whitson Street station, which although nearly a half-mile from the Centre, is conveniently close to the Broadmead shopping area where new stores have been built from among the ruins of the war. Passengers on the country services are thus saved the inconvenience of having to transfer to city services for relatively short journeys within the city boundary as they had had to do before.

City Services Reorganised

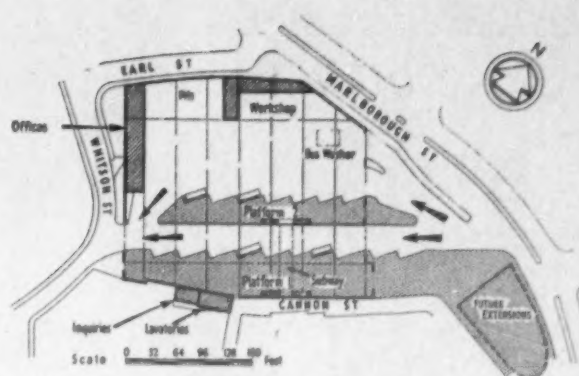
Removal of all the country services terminal stops to Whitson Street naturally entailed the rerouting of the city end of these services and, consequently, if no other changes had been made, this would have upset the previous transfer facilities between the country and city buses. For

as was the section of route from Centre to Hotwells. This was, however, covered by extending the Durdham Downs—Centre service (7) to Hotwells. The last named is served also, as it has been for many years, by service 99 on which the London NS-type double deckers were operated by Greyhound Motors between Prince Street and Avonmouth. The service number has been retained but the route has been extended north-westward to Patchway via Centre (99) or Old Market Street (99A) and Filton absorbing the old 5 and part of 6. The number 5 was used again for the Broomhill—Centre—Filton route which resulted from a marriage of journey from Brislington (Broomhill) on the 1 group with those from Centre to Filton formerly numbered 5A. Further adjustment of the 1 group was by diverting the Bromley Heath—Hotwells service (84) to Cribbs Causeway (84

opposition. They were then approved in principle subject to agreement being reached on certain route modifications. The only City services as such which use the new bus station are those to Temple Meads Station via Old Market (16) and Centre (17), replacing the old Centre—Temple Meads service. One effect of the revisions was, as we recorded at the time, to provide somewhat later last journeys on most of the city routes.

Site for the Station

For many years Bristol had suffered from the lack of a bus station, and in consequence the traffic through the city, particularly in the Centre, has



Layout of the country bus station and garage at Bristol

new ring road, setting down and picking up passengers from two long saw-like platforms running the full length of the building, and leaving at the far end by way of Whitson Street. This arrangement has enabled the greater part of the site to be used for vehicle storage and maintenance.

In order to ease the problem of circulation, the two passenger platforms have been linked by a subway, the platform layout being carefully designed to lead people automatically towards the subway. Each of the 20 bus loading bays is divided from the roadway by two balustrades, on the second of which the timetables and destinations are displayed. Seating has been provided in the vicinity of each bay, and provision has been made for a tobacco and newspaper kiosk on the main passenger platform, where

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a booking and inquiry office, incorporating a parcels and left luggage service, is sited.

Maintenance Facilities

Ancillary accommodation is provided in a two-storey block situated under the rise of Whitson Street. Here are the rooms where conductors pay in and draw their ticket boxes, and the staff amenities in this building also include a large canteen and well-equipped kitchen. Behind large sliding doors at the far side of the station is the maintenance area where five repair pits have been installed, together with storage for spares and replacements. Nearby is situated an automatic Dawson bus washer through which all vehicles will pass after their day's duty.

The pumps for refuelling are located on the



The entrance to the new bus station for vehicles; an interior view taken on Platform 1 showing the bus stands and, right, the entrances for vehicles to Platform 2 and the garage area



and 84A) or Lawrence Weston (84B); the covering of the Centre—Hotwells section by 7 has already been mentioned.

Serving New Shops

The somewhat inconspicuous 141 service between



The Bristol city routes

Prince Street and Brislington (Broomhill or Bloomfield Road) via St. Anne's Station—Broomhill journeys as a result of the authorisation of 236 to operate between Broomhill and

gated. This project, however, would have caused overmuch disturbance to adjoining roads and property, but it was clear that an alternative site in the vicinity of the new Broadmead shopping



The vehicle exit from the bus station in Whitson Street; the staff canteen and, right, the maintenance pits in the garage

that reason the opportunity was taken to reorganise the city's services at the same time. With these changes, the total route mileage of both city and country services rose to 301, compared with 253 before, but no more vehicles have been necessary. This affords evidence of the more efficient use of the bus fleet which now results. It was also necessary to revise some 1,300 crew duties (taking driver and conductor as one) and to transfer some crews between depots. This was worked out with the crews on a voluntary basis. The extent of the reorganisation was considerable and it must suffice to cite a few examples of what was done. The Lockleaze—Centre and Prince Street—Inns Court Green services were linked as 21 and the Clifton—Centre and Hotwells—Downend services were joined as 18, the old 284 being lost,

Filton or Patchway. This also replaced Broomhill—Old Market and Old Market—Patchway services and provided yet another facility to and from the shops in the Broadmead area. A further example was afforded by linking the Withywood—Prince Street route with that from Centre to Avonmouth via Zetland Road and Sea Mills. As well as the service provided over the old route 5 between Centre and Filton by the extension of 99, the road was also covered by extending 3 which previously ran from Whitchurch to Centre, while the new 145 from Stockwood to Shirehampton via Old Market, Henleaze and Westbury managed ingeniously to take in former Shirehampton—Westbury and Horsefair—Henleaze services. The applications came up for hearing on September 1 and met with little

opposition. Eventually the site of the old permanent way repair depot, near St. James's Church, was considered. There were many advantages to this proposal, the most significant of which was the position of the site in relation to the Bristol Corporation's new inner ring road. In 1955 the project was approved in principle and plans were drawn up. It was essential to provide, in addition to the amenities of a country bus station, covered accommodation for approximately 100 vehicles; with maintenance and bus washing facilities to allow vehicles to be serviced at their point of departure, thus cutting down the uneconomic empty running of buses to and from their garages. The building has been constructed to allow buses to enter from the lower end of the

Marlborough Street side of the garage building and one of these is visible in the illustration of the entrances to Platform 2 and the garage area. The future extensions shown on the plan depend upon the demolition of an existing building and would make possible consolidation of office premises. For the statistically minded it may be recorded that the construction of the bus station involved the excavation of some 20,000 tons of material, the use of 750,000 bricks and over 15,000 bags of cement. The roof contains 400 tons of steel, covering an area of 1½ acres, and over ½ acre of glass has been used. The architect was Mr. A. A. Briggs, architect of the Tilling Group, and the assistant architect in charge was Mr. G. R. Toogood. General contractor was John Knox (Bristol), Limited, and sub-contractors and suppliers are listed in the table.

LORRY—BUS—COACH

Kerb Campaign for Provinces

THERE is to be a conference in London on January 20, to be attended by T.R.T.A. secretaries from all divisions. Their task will be to prepare an extension of the T.R.T.A. "Kerb Space is Precious" campaign on a nationwide basis. The campaign, launched last October by the Minister of Transport, has been confined so far to the London traffic area, where it has had the wholehearted support of a large number of trade and industrial bodies. Messages of goodwill have been received from many highway, municipal and police authorities. The need now is to plan in detail for a reduction to the absolute minimum in the waiting time of commercial vehicles delivering and collecting goods in congested provincial shopping and commercial centres. Shopkeepers and their suppliers, as well as drivers and traffic staffs, are asked to conform to a voluntary code of behaviour. Regional headquarters for the campaign will be established at T.R.T.A. divisional offices at Bristol, Birmingham, Cardiff, Plymouth, Manchester, Newcastle, Edinburgh, Nottingham, Liverpool, Leeds, Hull and Sheffield, but all towns in the country will be embraced in the scheme.

Low Yield on Bus Operation

SUBSTANDARD single and return fares on Lincolnshire Road Car routes are being raised to the authorised scale, and workmen's day return tickets discontinued, following a successful application in these terms to the East Midlands Area Traffic Commissioners. It was stated that the increased revenue of £15,500 a year would not counterbalance additional wage costs of £40,000 and that the resulting return on capital employed would be no more than 2.69 per cent. There would still be 129 routes, or 51 per cent of total mileage, operating below cost.

Dover-Calais Ferry

OPERATION of the Dover-Calais vehicle ferry service, provided by European Ferries, Limited, is now expected to commence on Tuesday, January 20. Initially the service will be regulated to demand, but eventually thrice-weekly departures are envisaged. The service will be begun with one converted LST vessel, the *Empire Shearwater*. Departure times will be limited only to a minor extent by tides; they will be adjusted to meet users' requirements; initially departure will be at about 11 a.m. and the voyage should occupy not more than 2½ hr. from casting off to tie up. The European Ferries is to supply and operate two tractors for handling semi-trailers, one Leyland and one Commer, each with disc wheel coupling. They will travel with the ship to perform the same services at Calais. While France, Italy and Switzerland are likely to be the principal destinations for vehicles using this route, traffic has already been offered for Belgium and other Low Countries.

Transport Technology Outstrips Planners

IT was high time there was another impartial inquiry covering the whole field of transport, said Mr. R. Morton Mitchell, chief executive officer of the Road Haulage Association, on

Monday this week. The last occasion was more than 30 years ago when a Royal Commission was appointed to report on the subject. Since then there had been tremendous developments in transport technology, the impact of which upon the country's economy had not been measured. By "impartial" he did not mean merely non-political and non-sectarian; he meant also that the inquiry should not be dominated, as had "so often happened



The C.I.E. Leyland Titan bus with illuminated front and side advertisements (see paragraph): right, A.E.C. Bridgemaster on loan for 12 months to Liverpool Transport. It incorporates a simple ram effect hot water radiator heating system developed by Park Royal Vehicles

in the past, by persons with a railway mentality." At the present time the Exchequer was committed to an expenditure of £1,600 million to meet railway losses and the cost of interim modernisation schemes which, of themselves, could not make the railway undertaking commercially successful. This heavy taxation burden represented about one-third of the country's annual budget, he claimed.

Reallocation of Edinburgh Bus Routes

PART of an economy programme by Edinburgh Transport Department this week concentrated single-deck buses at Longstone garage and into Tollcross garage there were transferred from the central garage at Annandale Street four routes which pass Tollcross. The aim is to reduce staff travelling time allowances and to give added supervision and therefore smoother running of services at vehicle changeover points. Several route alterations are proposed as part of the programme, which may obviate the need for fare increases.

Southampton Returns and Transfers

POWER to abolish return fares and transfer fare facilities on its bus services is to be sought by Southampton Corporation Transport in an endeavour to offset the cost of recent wage awards. The expected yield from the necessary application to the traffic commissioners will not be sufficient to meet in full the depreciation situation on the fleet of buses, and when the financing of the replacement programme is considered, fares

will have to be reviewed again. Transfer tickets were unfavourably commented upon by the commissioners at the last fares application. But Councillor W. A. Stearn, chairman of the Transport Committee, stated that as they were not purchasing any vehicles at the present time, they proposed to pass on the present favourable position regarding depreciation to the travelling public.

To minimise the effect on the regular traveller, the general manager (Mr. G. Armstrong) has been asked to examine the possibility of introducing season tickets. He is also to review the multi-journey school term contracts. The committee has decided not to repeat last winter's experiment of drastically reducing evening bus services, although the position will be kept under review. Councillor

was not excessive. The variation regarding season tickets was, in fact, a compromise by the commissioners between what the applicants sought, i.e. abolition of three-monthly tickets, and what the objectors asked, i.e. retention with the existing 7d. base.

Illuminated Bus Advertisements

ILLUMINATED advertising panels are now appearing on Coras Iompair Eireann buses. Designs printed in reverse on translucent plastics can be mounted on the front and side panels. Advertisements can be either painted or paper can be used. The cost of front panel spaces will be £13 per annum and the cost of side panel spaces £39 per annum. This compares with £5 17s. and £20 16s. respectively for ordinary posters. The front advertisements are illuminated by six 6-watt bulbs and the side panels by 17 similar bulbs, all fed from an additional battery on the bus. Assembly and fitting is under the supervision of the C.I.E. Inchicore bodyshops. Advertising is carried on by the C.I.E. subsidiary company, Transport Subsidiary, Limited, 59 Upper O'Connell Street, Dublin. C.I.E. has just ordered a further 30 Leyland Titan 74-seat buses with fully automatic transmission.

Disposal of Brighton Trolleybuses

BUYERS have been found for postwar, but not prewar, trolleybuses of Brighton Corporation Transport which are shortly to be replaced by buses. Two municipal undertakings have offered to buy eight—six for £250 each and two for £500 each. These offers are to be accepted. In March, the first section of trolleybus routes will disappear. Twenty buses are on order, 15 to replace trolleybuses and five to replace present buses.

Skye Goods and Passenger Services

HAVING acquired the business of the Skye Transport Company, David MacBrayne, Limited, applied successfully on January 7 for the transfer of the stage and tours licences formerly held by the Skye concern. Mr. Alex Robertson, deputy chairman of the Scottish Traffic Commissioners, said that the Skye services had been running at a loss for a number of years and had sometimes lost as much as £40 in a week, but he hoped that they would "wash their face" in the future. MacBrayne proposes to give Skye a much better service than in the past. MacBrayne also applied for a B-licence in respect of three vehicles on the island. The objectors were assured that the company would carry only goods formerly shipped by the steamer between Kyle of Lochalsh and Portree. The new road service will start on May 1 when the *Loch Nevis* is withdrawn.

Bus and Coach Developments

R. E. Wake proposes to abandon the Charlton Musgrove-Bruton section of his Wincanton-Bruton service. Thorpe Coaches, Limited, seeks the excursions and tours from Walthamstow of F. W. Dawson and Company. Conway Hunt, Limited, applies for the licences of Mears Motors, Limited, Richmond. Sheffield Corporation seeks bus service licences to enable it to replace its Sheffield Lane Top and Abbey Lane tram routes. Reading Corporation proposes a weekday route (J) between Stations and Coley Park (Wensley Road) via Bridge Street, Pell Street, Berkeley Avenue and Shaw Road. County Coaches (S. R. Tynan), Stanley, proposes a stage service between Burnhope and Durham via Peartree, Holmside, Edmondsley and Sacriston.

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A CONCRETE INVERT

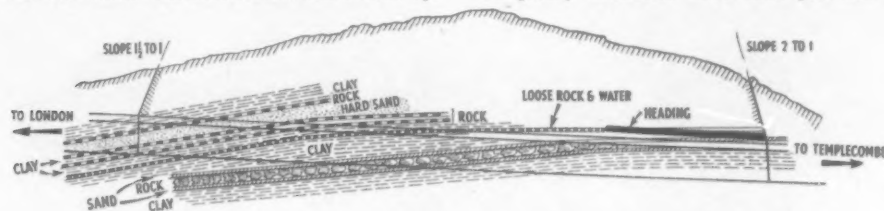
In Gillingham (Dorset) Tunnel

A SOUTHERN REGION RECONSTRUCTION

AS was indicated in our issue of December 20 last, a particularly interesting task is being carried out by the chief civil engineer's department of the Southern Region of British Railways in Gillingham Tunnel in Dorset on the London—Exeter main line. This double-track tunnel, No. 312, was completed in 1859 and is 745 yards long. The western half of the tunnel has given trouble over a period of years; the tunnel walls are out of alignment and the brick invert, built at that end when the tunnel was constructed, has broken up.

approximately 2 ft. 9 in. below the existing rail levels. It is reinforced with old rails and is taken under the existing tunnel walls. The scheme involves excavating some 7 ft. 3 in. deep below rail level, cutting out the defective old brick or old concrete invert together with a proportion of the existing tunnel wall footings and disposing of all excavated material outside the tunnel and bringing in and placing the concrete, etc., to form the new invert.

Temporary crossovers have been provided at



Section along the length of Gillingham tunnel, showing geological formation

The tunnel is through silty clay and at the Exeter end passes through bands of sandstone rock and sand where a good deal of water is discharged into the tunnel.

The clay in this portion exerted heavy swelling pressures during construction, which required very strong timbering. The water flow was eventually reduced by driving a heading off the tunnel for a length of 200 yards and piping off the flow. This water is very pure and is today taken to Templecombe motive power depot. At the London end of the tunnel ground conditions were better and no invert was installed.

Investigations

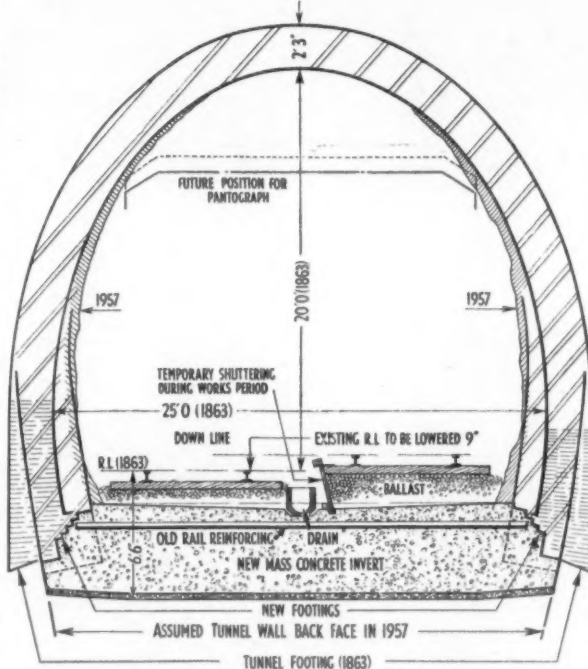
Cross-sections taken throughout the length of the tunnel recently revealed that the brick lining is relatively much less distorted in the London half of the tunnel, whilst the country half shows continual and abrupt changes of section, both in crown level and wall clearance. Throughout its life, the central and country portions of the tunnel have been very wet, and attempts have been made on a number of occasions to remedy the weak track formation conditions arising therefrom, and also to prevent movement of the tunnel walls.

Concern has been felt over the last 10 years or so for the continued stability of the country portion of the tunnel, particularly at a point near the portal, owing to the track and the 6-ft. drain rising and the reduced clearances to the side walls. Also, the riding through the tunnel was noticeably rougher than it was outside it. Therefore, remedial action was eventually decided on in January, 1958, and it was determined to provide a mass concrete invert, with old rail reinforcing in the top portion, throughout the country half. At the same time the depth of this invert was calculated to conform with

each end of the tunnel to enable the work to be carried out with single-line working, the crossovers at the Exeter end being installed some 1/4-mile back from the tunnel portal to allow access to the tipping ground and concrete mixing plant. The up and down lines are used alternately as the single running line to suit the programme of work. This is of a very arduous nature and is carried out under wet and difficult conditions, but extreme care must be exercised throughout, especially when excavating under the tunnel walls, and the top surface of the new invert sections must be carefully finished to the final levels which are provided by the technical staff to ensure proper clearances and drainage.

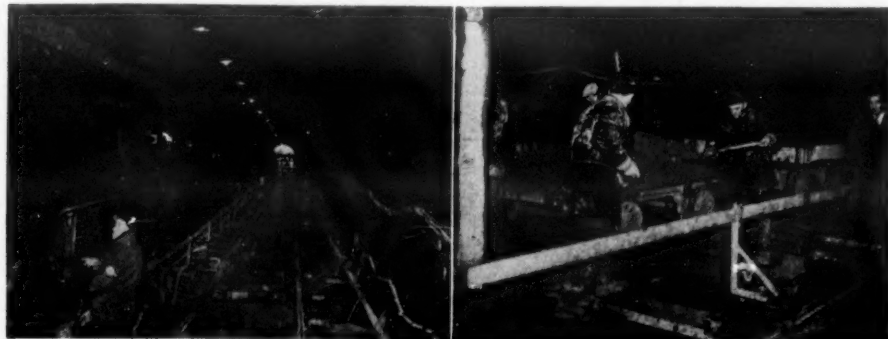
Work is carried out by day and night shifts to reduce the overall time of single-line working to a minimum and to avoid leaving the excavations open or unattended. The duration of each shift is 11 hr. The tunnel is divided into 6-ft. sections which

are clearly marked on the tunnel walls and numbered. These sections, which ultimately form the completed invert, are excavated and concreted for half the width of the tunnel in accordance with a schedule planned to ensure the minimum loss of support to the side walls of the tunnel. The scheme of operation has been based on the principle that the work will be confined to a length of 2 chains at a time, the whole of this portion being completed before moving up to the next 2-chain length, as from a structural and working point of view it would be most unwise to attempt to carry out a greater length at one time. Work proceeds



Cross-section of Gillingham tunnel, showing concrete invert now being constructed and outlining the 1859 dimensions as shown in an illustration to an Institution of Civil Engineers paper of 1863. The tunnel was originally known by the London and South Western Railway as Buckhorn Weston

simultaneously on two of the half sections under one track at a time. The excavated material is hand-loaded into specially designed skips carried on normal platelayers' trolleys. Four trolleys are used and placed one on each side of the two trenches being excavated. As and when these become



Sections of up road opened out for construction of new invert; right, vibrating concrete placed under tunnel wall and below one track

the probable future requirements of track electrification, involving lowering of the tracks to provide additional overhead clearance for the installation of the catenary.

Soil Survey

A soil survey carried out by the staff of the chief civil engineer's department confirmed the evidence of the old tunnel construction experience and the general condition of the linings, by showing that the clay in the country half of the tunnel was both weaker in shear and of a more treacherous character than elsewhere. This survey is being used as a basis for the design of the new tunnel invert. It has been decided to install the latter throughout the tunnel, a lighter form of design being used in the London half, compared with that now being constructed in the country half.

The work now in progress comprises the construction of a mass concrete invert throughout the country half of the tunnel. This invert consists of a concrete slab 4 ft. 6 in. thick with its top surface

Tracks Retained

The occupied track is retained in position throughout the course of the work for the purpose of transporting materials and spoil, and the sleepers are moved or packed up from the new concrete invert to suit the progress of the work. When excavating under the tunnel wall footings, arrangements are made to insert temporary props formed of short lengths of old rail and timber, as a safeguard against loose or falling bricks, should this be necessary. The concrete for the invert is mixed outside the tunnel and conveyed to the actual site of work on boxed platelayers' trolleys fitted with rubber seals and drawn by the rail motor trolley. For each journey into the tunnel two trolley loads of concrete are conveyed and when unloaded into the excavations it is vibrated pneumatically.

(To be continued)



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UNIT RADAR SYSTEM

Latest Kelvin Hughes Development

SINCE the postwar introduction of radar for commercial use in merchant ships, it has proved particularly useful for vessels engaged on coastwise and short sea voyages which so often need to use congested sea lanes or restricted harbour mouths. For this reason last week's announcement by Kelvin and Hughes (Marine), Limited, of its new unit radar system, together with the introduction of the True Plot true motion type radar, is of particular interest by reason of its flexibility of application.

In the K.H. Unit System a choice of four basic display units is available to operate in conjunction

vide maximum accessibility for servicing and for rapid replacement.

The transmitter-receiver unit plays a most important rôle in determining the long-range performance of the set: its discrimination ability and the clarity of the picture at short ranges. For the Unit System a development of the Type 14 transmitter-receiver has been chosen. This is a high power transmitter which has been thoroughly tried and tested over the past two years in several hundred vessels of all classes. The saving in both power consumption and production cost which would be provided by a lower power transmitter is insignifi-



Three Kelvin Hughes display units
in the new system are the Type
14/12, the 14/12 True Plot and the
14/16 True Plot

with a transmitter-receiver and scanner of the highest possible standard of performance. All are designed to comply fully with the new 1957 Specification of the Ministry of Transport. Kelvin Hughes pioneered the use of printed circuit construction for marine application and now claims that it has the advantage of a two-year lead in knowledge and practical experience in this technique. All circuits are unit constructed to pro-

vide maximum accessibility for servicing and for rapid replacement. cant and therefore a high power transmitter is offered with even the lowest price equipment, to ensure big set performance.

Scanner

The slotted waveguide scanner, apart from being lighter in weight, is designed to have characteristics superior to other types of scanner. This is particularly true when considering its ability to operate in conjunction with a high power transmitter. Kelvin Hughes has pioneered this type of scanner for merchant marine use, and was the first to introduce it with the Type 14 radar two years ago. A development of the Type 14 scanner is part of the new Unit System. Its light weight, low windage and extremely low side radiation makes it suitable for both large and small vessels. A high performance scanner of this type is particularly essential for the smaller vessel where picture definition at short ranges in close waters is vitally important.

In the Unit radar system a choice of four display units is available to operate in conjunction with the transmitter-receiver and scanner units. Facilities are also provided to enable two display units to be operated simultaneously from a common transmitter and scanner system. This facility of two display units, operating if need be on different range scales, has been made available as standard where required. The Type 14/9 display unit has a 9 in. diameter P.P.I. (plan position indicator) and is a development of the Type 14 radar introduced two years ago. A magnifier lens is available to increase the size of the display optically if required and five range scales are available: ¼ to 3 miles (continuously adjustable), 6 miles, 12 miles, 24 miles and 48 miles. The Type 14/12 display unit is a 12 in. diameter P.P.I. display of new design. It is suitable for table or pedestal mounting and can be operated in conjunction with either another Type 14/12 or 14/9 acting as a second display. The ranges are as for the Type 14/9.

True Plot Display Units

During the past two years, practical operational trials have been conducted using the true motion type of presentation. The technical and operational limitations of this form of display have been fully investigated and the two True Plot displays have been designed with a full appreciation of the practical operational problems involved. The additional information derived from the true motion type of presentation is obtained from the movement of a target vessel across the P.P.I. screen. This is commonly obtained by observing the afterglow trail behind the target vessel.

Exhaustive trials with all types of cathode ray tubes have shown that this is not entirely satisfactory and therefore Kelvin Hughes has considered it essential to use a tube face plotter when operating with true motion presentation. The extensive optical research facilities within the Kelvin Hughes organisation have been used to produce a tube face reflection plotter. With it true plots of his own and several target vessels can be easily kept by the navigator without interfering with his normal watchkeeping duties. In this way information about the true courses and speeds of target vessels are clearly presented as a semi-permanent record.

Relative Displays

These displays can also be operated as relative motion displays with own ship off centred. The advantage is that for a given range scale in use, the range of view in one direction can be increased at the expense of the range of view in the reciprocal direction. This would normally be used to increase the range of view ahead at the expense of the range of view astern. Practical operational trials have shown that it is sometimes desirable to operate a second relative motion display as a monitor. In this way the True Plot display can be used on the shorter ranges for ship avoidance whilst vessels at greater ranges or coastal navigational marks can be kept under constant observation on the second display.

Careful thought has been given to the operational problem of resetting own ships position. Visual and aural warning is given when resetting becomes necessary and it can be achieved either manually or automatically. In the latter case the display is automatically centred whilst resetting is taking place. The Type 14/12 True Plot is a 12 in. P.P.I. display with optional true motion type of presentation. It can be operated in conjunction with either the 14/9 or 14/12 display units. Seven range scales are provided. They are ¼ mile, 1½ miles, 3 miles, 6 miles, 12 miles, 24 miles and 48 miles with True Plot available on the five lowest scale ranges.

The deck-mounted Type 14/16 True Plot unit incorporates a 16 in. diameter P.P.I. screen. A full range of controls is provided, suitably grouped according to their operational use. True motion facilities are provided on all ranges up to and including 12 miles and an illuminated window in the range indicator panel shows whether or not the display is in the true motion condition. A standby switch allows the entire equipment to be kept in a warmed up condition ready for operation.



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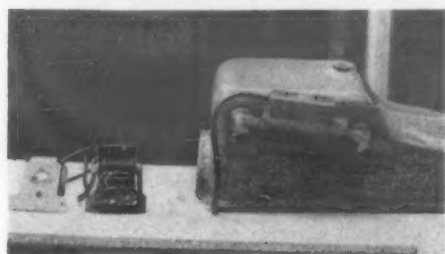
SINCE we first described the Peregrine combined engine sump heater and battery charger, wide experience has been gained with the unit in service on petrol and diesel engines of fire tenders, ambulances and other vehicles as well as the engines of industrial plant and standby power-generation equipment. In addition to this field experience, a great deal of development and test work on the sumps of various engines has been carried out by the manufacturer, Power Frequency Heating, Limited, Peregrine Works, Lampton Road, Hounslow, Middlesex, so that a range of end fittings to suit a variety of engines and a wealth of data on the performance to be expected under given service conditions are now available.

It will be recalled that the Peregrine heater—battery charger is a transformer wound on a hollow core, the ends of which are connected to the oil sump below oil level. When current is passed through the primary winding of the transformer, eddy currents set up in the core heat the oil inside

to obviate starting difficulties and possible excessive wear during the warm up have been in use for many years and the practice has become common with engines that must be maintained in readiness for instant full-power operation, such as fire tenders, ambulances, and emergency power supplies. The use of an electric immersion heater at some convenient point in the cooling system is common, but this has the disadvantage that it is applicable only to liquid-cooled engines and moreover, to be effective, requires a heater of fairly high capacity to offset the natural radiative capacity of the cooling system. Heating the sump oil has the obvious advantages that it can be used with both air- and liquid-cooled engines and that it applies heat in the most advantageous place—at the bottom—where the naturally rising heat tends to keep oil on working parts fluid as well as ensuring good oil circulation immediately the engine starts.

Avoiding Disadvantages

Sump immersion heaters of the resistance type of up to about 500 watts dissipation have been used but these have suffered from the defect of carbon build-up on the heating element causing it to over-heat and eventually to burn out. This type of heater has also been found to have harmful effects on some grades of lubricating oil through overheating. Consequently, the use of the sump immersion heater has generally been discontinued.



Typical installation of a 200-watt Peregrine heater-charger fitted to a 5-litre engine sump, which gives scale to the rectifier unit

The unit is fitted to the sump at an angle to the horizontal, thus promoting the circulation of the oil through the hollow core and sump by convection. Low-voltage a.c. current induced in the transformer secondary winding is taken through a small rectifier to the battery.

The Peregrine is produced in two standard sizes, having a 1/2-in. bore with a consumption of 100 watts and a 1-in. bore with 200-watt consumption. The size of heater required for a particular engine depends on the oil capacity and shape of the sump as well as on the nature of its duty and ambient conditions in which it is used. Often, on large engines, more satisfactory results are obtained by fitting two 200-watt units instead of one larger one. Test data made available to us appear to show that one 200-watt unit is capable of raising the average temperature of the oil in a sump holding up to 3 gal. to between about 50 and 100 deg. F. above ambient, depending on the shape of the sump and its ability to provide good convection paths.

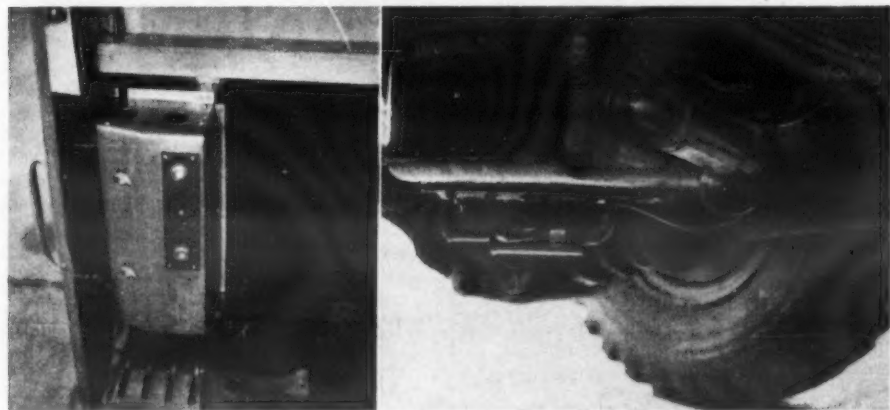
Test Results

The results obtained by Power Frequency Heating in tests with the sumps of several representative engines are given in the following table. With the heater in operation, the temperature of the oil varies at different points in the sump and between upper and lower levels of the oil but the variation is seldom greater than about 10 deg. F., except per-



All-weather plug-and-socket connection fitted to the rear panel of a Bedford van

The Peregrine heater has been developed to make use of the advantages of sump heating while avoiding its defects. Since electro-magnetic currents provide the heat source and the heating element comprises the whole of the internal bore of the hollow transformer core with an adequate area, there is no concentration of heat to carbonise the oil. One large British engine-manufacturing company, whose engines are used extensively in fire appliances and the like, some of which had experienced trouble with sump immersion heaters in the past, at its own request recently carried out a 100-hr. static rig test of the Peregrine heater. The test was severe, as a bare minimum of oil was used in the sump, but it was found that the oil had not deteriorated and there was no sign of carbonisation. This company reported that its tests had failed to show up any characteristic of the unit which



Covered rectifier-control unit in the cab of the M.T.C.A. A.E.C. Matador with separate switches and indicator lights for each unit and, right, the two 200-watt heaters fitted to the sump of the 11.3-litre A.E.C. diesel engine

haps in sumps where baffles or shape affect convection paths. The figures given in the table for oil temperature are for mean temperature taken after the heater had been switched on for 3 to 4 hr. from a cold start and the oil stirred before taking thermometer readings of mass temperature.

Engine sump	Content and grade	Ambient temp. deg. F.	Oil temp. deg. F.	Temp. rise deg. F.	Peregrine unit(s) used
Commer six-cyl. petrol	11-gal. S.A.E. 30	52	148	96	One 200 watt
do. do.	do.	-20	63	83*	One 200 watt
Ruston and Hornsby six-cyl. diesel	41-gal. S.A.E. 20	49	129	80	Two 200 watt
A.E.C. 7.7-cyl. diesel	5-gal. S.A.E. 30	66	149	83	Two 200 watt

* Test in cold chamber. Stopped after 1 1/2 hr., oil temperature still rising.

One of the more difficult engines to equip was the horizontal Perkins P6 diesel fitted to a Dennis Vulture refuse collector. The sump is fitted with deep crossing baffle plates and to provide for oil circulation these divisions were drilled when the Peregrine heater was fitted. Holding 2 1/2 gal. of S.A.E. 20 and fitted with one 200-watt unit, it was found that in an ambient temperature of 58 deg. F. oil surface temperatures of 114 deg. F. on the heater side of the sump and 97 deg. F. on the remote side could be maintained. Tests with the sump of a Foden six-cylinder two-stroke diesel engine filled with 4 1/2 gal. of S.A.E. 30 oil and fitted with two 200-watt heaters produced an average temperature of 48 deg. F. above ambient with only one unit in use and 76.7 deg. F. with both heaters.

These tests were carried out on sumps detached from their engines. It is difficult to make accurate oil-temperature measurements when sump and engine are assembled, but indications are that oil temperature rises are of the same order as those in a detached sump, under the same conditions.

Various methods of heating engines of vehicles or plant kept out of doors or in unheated buildings

could adversely affect the oil in service and that it had no objection to the fitting of the Peregrine heater to any of its engines.

An additional advantage of the Peregrine unit is of course the battery charging feature. The radiator starting from cold of any type of engine when the battery is maintained in optimum condition and the longer life to be expected from batteries that are not subjected to heavy starting loads when in a partially discharged condition are well known. In standard form the Peregrine provides maximum charging current of about 1 1/2 amp. for 6-, 12- or 24-volt systems. The unit is available with a variety of connections for mains supply, including waterproof and breakaway fittings for external mounting on vehicles. Fitting instructions are supplied with each unit or, if required, the company will fit suitable units to vehicles or sumps at its Hounslow works. In some cases Peregrine-equipped engine sumps are available from stock on an exchange basis. Information is also available on power supply systems to suit various parking arrangements, such as have been installed by operators who use the Peregrine extensively.

At London Airport

We were recently given a first-hand report of the very satisfactory performance of an 11.3-litre diesel-engined A.E.C. Matador fitted with two 200-watt units, which is one of two similar airfield control vehicles operated by the Ministry of Transport and Civil Aviation at London Airport. The vehicles stand out of doors on the exposed airfield continuously and as their function requires them to be positioned adjacent to the runway in use for aircraft landings, they must be ready for instant starting and removal, with heavy trailers, to other parts of the airfield with changes of wind direction. The vehicle fitted with the Peregrine sump heaters was reported to be an instant starter and ready for immediate full-power operation in all weather conditions experienced between fitting the units and the time of our visit, which had included ground and air frost on several occasions.

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- ★ Tank shell insulated to keep temperatures of load within specified limits in all climatic conditions.
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NEWS FROM ALL QUARTERS

Douglas Bus and Air Terminal

Tynwald, the Manx Parliament, has approved a petition of Douglas Corporation for authority to borrow £37,000 to carry out the first part of the construction of the new bus and airways terminal at Lord Street car park.

Portsmouth Line Centenary

A special train has been arranged for January 25, to commemorate the centenary of the opening of the Godalming-Havant section of the direct Portsmouth line, thus completing what has since become the main rail artery between London and Portsmouth and the Isle of Wight. The train, which will include an ex-L. and S.W.R. coach and Pullman buffet car, will leave Victoria at 10.12 a.m. Inquiries for tickets should be made to Mr. G. R. Lockie, 36 Harold Road, London, S.E.19.

Road Census Facts and Figures

The number of motor vehicles counted on trunk and class I roads in England and Wales during the traffic census in the week ended August 17, 1958, was 14 per cent greater than in the corresponding week in 1957. Private cars showed an increase of 17 per cent and heavy goods vehicles an increase of 6 per cent. The number of buses and coaches was about the same as in 1956 and 1957. Trunk roads carried 43 per cent of the total travel although they comprise only 30 per cent of the total mileage of trunk and class I roads. Night traffic is excluded from this census.

More Road Improvements Announced

Cowick Street, Exeter, part of the main London—Penzance road, A30, is to be widened at a total cost estimated at £111,300. There will be a 44-ft. divided carriageway from St. Thomas railway bridge to the Exe bridge and a roundabout at the junctions of Okehampton Street and Alphington Street. Ultimately there is to be a new bridge over the River Exe. A Monmouthshire 14-mile bottleneck will disappear now that work is starting on widening (to three lanes) the A48 London—Fishguard Road between Llanvaches and Llanfair Discoed Arch, near Caerwent. Methley Bridge, on the Leeds—Pontefract road, is to be rebuilt.

Case for Another Mersey Crossing

A meeting called on the advice of the Ministry of Transport, and including representatives of local authorities, the Ministry of Transport, and the Mersey Docks and Harbour Board, agreed at a private meeting in Liverpool on January 6 that there was a case for building a second Mersey tunnel or a road bridge in the Liverpool, Birkenhead, or Bebington area. They agreed to ask three groups of experts to report on the problems of building either a tunnel or a bridge and are to call in experts to report on engineering, financial and future traffic aspects. A consultative committee is to be set up to consider the report of the experts. The present tunnel has a maximum capacity of 53,000 vehicles a day, but it is estimated that within a few years twice that number will want to cross the river between Lancashire and Cheshire at this point.

Jersey Fuel Tax

Tax on petrol, motor and aviation spirit, and on fuel oil, including diesel oil, in Jersey is 6d. per 42 gal. and is likely to remain that way, according to legislation to be brought before the next session of the island's parliament. The assembly will also be asked to continue to allow the import free of entry duties of motor vehicles of all descriptions. Vehicles are free of purchase tax.

Continental Rail Tests to 125 m.p.h.

Train speeds of up to 125 m.p.h. are the object of a number of tests just concluded on the Freising—Lagenbach line by the test and research department of the International Railways Association, an organisation to which 40 European and overseas railway administrations belong. The test train has developed speeds of up to 103 m.p.h. so far. As reported last week, the 1959 summer timetables of the German Federal Railway will involve maximum speeds of 87 m.p.h. on suitable sections of line.

Royal Railway Saloon on Show

Queen Victoria's railway saloon, built in 1869 by the former London and North Western Railway, and one of the most notable transport relics preserved by the British Transport Commission, was to make a short journey through London streets on Thursday this week when it was to be taken to Earls Court to be shown at the Furniture Exhibition from January 28 to February 7. The coach was to make the main part of its journey by rail from its temporary store at Wolverton works to Brompton and Fulham sidings. Its value is placed at £45,000.

Absent Refreshment Facilities Explained

In a valuation court at Great Yarmouth, a British Railways representative explained why Vauxhall Station in that town has never had a refreshment room. He said that when the enabling Act for the railway was going through in the last century, it was barred from operating any refreshment facilities at this station. The Act provided that a certain brewery firm would provide the capital to build that line, and it also agreed to provide a public house outside most of the stations. The railway company, as it existed then, agreed to have included in the Act a complete ban on the building of refreshment rooms at any of the stations along the line.

New Sleeper Reservation System

From February 1, reservations for sleeping-car berths on British Railways will be made only on payment of the full fees for the berths required. This measure has been taken to alleviate the increasing irritation caused to genuine travellers who are refused sleeping-car berths because of advance bookings which in the event are not taken up. A refund of 75 per cent of the prepaid fee will be made to passengers who cancel their reservations before 4 p.m. on the day prior to that for which berths have been booked. In the case of passengers whose names have been placed on a waiting list, and from whom prepaid fees have been accepted refunds will be made in full if berths do not become available.

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COMMERCIAL AVIATION

Control of Yeadon

NEW AIRCRAFT IN SERVICE

AGREEMENT has been reached between Yeadon Aviation, Limited, and Leeds and Bradford Corporations on the terms for the settlement of all claims by the company, in connection with the takeover of the aerodrome and the Leeds-Bradford Airport Joint Committee has published its recommendations to the corporations. Subject to prompt notice of the assent of the company, it is to be a recommendation to the councils to settle their differences with Yeadon Aviation on terms which include: The sum to be paid by the councils to the company for the improvements, additions and equipment proposed to be transferred from the company to the councils shall be £17,400; any claim by the company for operating the airport from October 6 to December 30, 1958, shall be satisfied by a payment by the councils to the company of an amount equal to the loss sustained by the company in so doing as ascertained and certified by the treasurer from the audited accounts of the company produced to him, or the sum of £4,000, which ever is less, such payment to be made without admission of liability, but cognisance would be taken of the fact that the company would operate the airport between such dates.

Customs at Derby

Derby Airport has been granted customs facilities. Customs officials have selected a suitable building and will start work there before Easter. This will enable flights to travel direct to the Continent instead of calling at Birmingham.

Air France Montreal-Chicago Rights

Following negotiations which lasted for more than two years, the Canadian Government has granted France civil flying rights between Montreal and Chicago, on the route that has been flown thrice-weekly between these two cities by Air France since 1954.

Air France Caravelle Services

This summer Air France will introduce the Sud SE-210 Caravelle on a number of European routes including London-Nice and London-Paris. The Caravelle will fly daily between London and Nice from mid-June. There will also be a flight in each direction between Paris and London in order to position the aircraft.

P.A.A. Atlantic Traffic

Pan American World Airways carried 300,771 passengers across the Atlantic in 1958, an increase of 6.6 per cent over a year ago. There were 164,123 travelling westbound and 136,648 eastbound. By the end of the year a total of 19,557 passengers had flown on the transatlantic service in the Boeing 707. In addition, 19,715 passengers travelled by the airline's Polar route between London and Paris and the West Coast of America.

All Propjet Fleet for A.L.T.

Aer Lingus has taken delivery of the first of three new 60-seat Viscount 808 aircraft which the company has ordered to replace its original four 48-seat Viscount 707s. Three 800s have been in service with the company since early last year. The delivery of the new Viscount—the *St. Colman*—marks the second stage of Aer Lingus propjet development plans. Already three of the seven Fokker F.27 Friendships which the company has ordered to replace its Douglas DC3 fleet have been delivered. The remaining four Friendships and two Viscount 808s will be delivered by April and from next summer all Aer Lingus scheduled passenger flights will be operated by propjet aircraft. The fleet will be composed of six Viscount 808s and seven Friendships. The four Viscount 707s—which first went into service with the company in 1954—and a number of DC3s will be sold. About five DC3s will be kept for freight and charter work.

British Air Traffic in November

It is provisionally estimated by the Ministry of Transport from statistical returns received that United Kingdom airlines traffic on scheduled and inclusive tour services amounted to 21.6 million short ton miles in November. This represents an increase of 1 per cent over November last year. In the early part of the month B.O.A.C. traffic and services had not yet returned to normal following the strike in October which explains the rather small increase in traffic; other United Kingdom airlines' traffic increased by 9 per cent. Capacity operated increased by 5 per cent to 39.2 million capacity ton miles and the overall load factor fell from 57 to 55 per cent. These provisional figures and figures for June to October are given in the following table:

	Capacity short ton-miles	Increase or decrease over 1957
June	58.0	+15%
July	62.8	+16%
August	65.8	+18%
September	60.8	+16%
October	44.5	+3%
November	39.2	+5%
	Load short ton-miles	
June	34.4	+7%
July	39.3	+11%
August	41.8	+13%
September	38.4	+8%
October	25.5	-4%
November	21.6	+1%
	Overall load factor	
June	58	1957
July	63	66
August	64	66
September	63	68
October	57	61
November	55	57

I.C.A.O. Regional Meeting in Rome

A regional air navigation meeting for the Middle East and South-East Asia began in Rome on January 7 under the auspices of the International Civil Aviation Organisation. The I.C.A.O. Air Navigation Commission has charged the Rome meeting, as a first responsibility, with the need for restating the basic operational requirements of the two regions, taking into account the new types of aircraft which have been or which will shortly be introduced into service and paying particular attention to the needs of turboprop and turbo jet-powered aircraft and of helicopters. After these operational requirements are decided upon, and after a satisfactory estimate is made of the types of aircraft to be used and of the traffic pattern which is likely to develop in the two areas within the foreseeable future, the meeting will then recommend detailed amendments to the two regional plans, as it finds necessary, in the specific fields of communications and navigation aids, aerodromes, meteorology, rules of the air, air traffic services and search and rescue.

A LOSS TO THE COMMISSION



The late Mr. J. W. WATKINS, C.V.O., D.S.O., M.C., M.Inst.T.

We deeply regret to record the sudden death on January 12 of Mr. James William Watkins, a member of the British Transport Commission since June 1, 1956. His family had many years of railway association, his father having been with the Midland Railway Company for fifty years. Born at Stonehouse (Glos.), on September 4, 1890, he entered the service of the former Midland Railway at Ashchurch on April 1, 1905, and served at several stations, gaining general railway experience, until he enlisted in the ranks of the 5th Battalion, Gloucestershire Regiment, in August, 1914. Subsequently commissioned in the field, he was posted to the 2nd Battalion, Lancashire Fusiliers. He served with that regiment in France until wounded in May, 1918, and rose to the rank of lieutenant-colonel in command of the battalion. He was awarded the D.S.O. and M.C., and was four times mentioned in dispatches. Returning to the Midland Railway in 1919, he was appointed to the headquarters staff and ten years later became assistant (outdoor section), chief general superintendent's office, Derby, L.M.S.R. He was promoted to be assistant divisional superintendent of operation, Derby, in January, 1932, and in December, 1942, became divisional superintendent of operation, Derby, being transferred to the similar post at Crewe in October, 1944. Mr. Watkins was appointed acting assistant chief operating manager, London Midland Region, in January, 1948, assistant operating superintendent in the following July and, on October 1 of the same year, operating superintendent, a position he vacated to become chief regional officer, later designated general manager, in March, 1951. Just over five years later he was invited to become a full-time member of the B.T.C.—the first regional general manager to have that distinction. He received the C.V.O. in June, 1951. He served as a vice-president of the Institute of Transport, was president of the Railway Students Association for 1956-57 and also presided over a number of staff, social and recreational organisations in his region.

THE NEW C.I.E.

Chairman's Statement

VIGOROUS POLICY

ADDRESSING members of the Dublin Chamber of Commerce on January 13, Dr. C. S. Andrews, chairman of Coras Iompair Eireann, outlined the future policy of the Irish transport undertaking. This includes a number of important developments and we set out an abstract of his statement below.

The board of C.I.E. has accepted a formidable challenge in undertaking the responsibility of implementing the policies laid down by the Oireachtas in the Transport Act, 1958, and on the board's response to this challenge may well depend the future of the public transport system for a generation. The Act places an obligation on the board to pay its way within five years from April 1, 1959. We are not deterred by this challenge. We intend to deserve success.

The response that C.I.E. will make to the challenge will be a threefold one: By making use of its new-found freedom of commercial action to seek for more traffic; by the application of the most up-to-date methods of management; by more efficient and more economic operation of the system including the elimination of patently uneconomic services. Most important is not merely to prevent a decline of traffic on the railways but to get more traffic. The removal of the restrictions on our commercial freedom will enable us to compete more effectively. We have set a target for ourselves to increase the revenue by 10 per cent.

Selling Campaign

We have already initiated what will become a progressively intensive campaign to sell more business. We intend to offer package deals to firms to carry all their traffic on an annual contract basis—this is made possible by the flexibility which the board now enjoys in quoting rates. Transport, in the widest sense, is a highly specialised business requiring nationwide facilities. The complexity of the work is now becoming more apparent to firms who undertook their own transport without appreciating this.

C.I.E. will establish a section which will provide a service to the managements of Irish businesses, freely advising on transport problems without obligation. I am confident that this section will be able to do valuable work for the country by bringing to light the true costs of transport to each firm. It will be charged with the responsibility of adapting public transport as far as possible to meet the requirements of each firm by the use of containers or other forms of modern equipment and techniques. A vital factor in the drive for increased traffic will, therefore, be service.

New Basis of Charging

One of the predicaments facing us is that the old scheme of railway charges was related to factors which are no longer valid since road vehicles destroyed the railway's monopoly. The change to a new basis of charging is a delicate task which cannot be done overnight; it involves the acceptance of calculated risks. There is no effective alternative: either we face the risks inherent in a revolutionary change in rates policy or we face the certainty of gradual atrophy of railway services.

It is vital that the cost of transport for Irish industry as a whole should be kept as cheap as possible. This can best be done by pooling resources—precisely what public transport does. It is necessary not merely that total transport costs should be low but that the costs of each firm should be kept as low as possible. This is the objective of the new rates policy.

It must be faced that in many cases where firms have left us in the past, the convenience of a public service was outweighed by the basis of charging. With the new basis of charging by contract for a firm's entire transport service, we are confident of regaining these traffics. It is only realistic to recognise that the change over from their own transport to public transport will take time. On the other hand, the development of the new commercial policy will require additional highly skilled commercial staff. We propose to select suitable people and train them for the task. This also will take time before the plan can be fully effective. One point I must emphasise: while our rail and road freight services will become increasingly competitive in cost, and in convenience, we cannot be expected to compete with illegal haulage. We are glad to report that Gardai mobile units have been formed to check this illegal haulage.

Passenger Services

I have been emphasising the freight traffic policy, because freight is the kernel of our problem, but we will try to develop more rail and road passenger business also. Our road passenger services are good. We shall endeavour so to maintain them and keep improving them to give better service to the public. Over a period in which the number of private cars has so greatly increased we have to a great extent managed to maintain—and in some cases to extend—our passenger carryings.

The improvement of rail services, as a result of the partial re-equipment with diesel railcars and locomotives and new carriages, has helped to hold traffic. Our aim is to improve further the general facilities because we believe that the main areas of population should not, unless for very cogent reasons, be deprived of a railway service offering rapid transport at a reasonable cost in clean, comfortable trains, well heated and with good lighting in winter months, and offering dining facilities on longer journeys. The importance of the overseas tourist trade to public transport is obvious, but we believe that there is room for further development of the home trade through attractive facilities for excursion and party travel.

Management Training

Contrary to popular belief the senior managerial and technical staffs available in C.I.E. are numerically quite inadequate for the proper management of an undertaking of such size and complexity. Management development and training schemes will be evolved to correct this; at the same time we will seek experience and knowledge and advice wherever we can get it.

During the past five years the railway has been largely re-equipped with diesel railcars, diesel locomotives, new passenger coaches and new wagons. This re-equipment has greatly improved the standards of service and the replacement of the old steam locomotives by diesel is saving the company about £14 million annually. Improved maintenance methods and the elimination of some

(Continued on page 12)

COR-TEN IS STILL NEWS

In 1954, for the first time in Britain on a wide continuous strip mill, The Steel Company of Wales began the manufacture of scw Cor-Ten.

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COR-TEN SAVES MONEY

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Please write to us at the address below for further information or for technical assistance in the application of scw Cor-Ten to your products

Wherever higher strength or greater resistance to atmospheric corrosion offer economic advantages, scw Cor-Ten has been used. Where corrosion and abrasion are both present (as in the case above) scw Cor-Ten's outstanding advantages are particularly effective.

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PARIS AND LILLE ELECTRIFICATION

Extension of S.N.C.F. 25,000-Volt 50-Cycle System

CONSIDERABLE ECONOMIES EXPECTED

ON January 7, 1959, Monsieur Robert Buron, Minister of Public Works and Transport in the French Government, formally inaugurated electric traction on the S.N.C.F. main line between Paris and Lille. This may be regarded as a landmark in the annals of French railway electrification even more than the completion of the Paris-Lyon scheme in 1952, for here for the first time in France steam is forsaken on a main line which presents neither very heavy gradients nor that remoteness from the coalfields which influenced the choice of electric traction on the P.O.-Midi Railway. The Paris-Lille route, running into a colliery area and with few gradients steeper than 1 in 200, might at first seem ideal ground for continued steam operation. But, in fact, the enormous coal saving must be held to justify the project—in 1957 consumption on this route totalled 725 tonnes per kilometre; under electric traction it is estimated that this will fall to 350 tonnes per kilometre per annum.

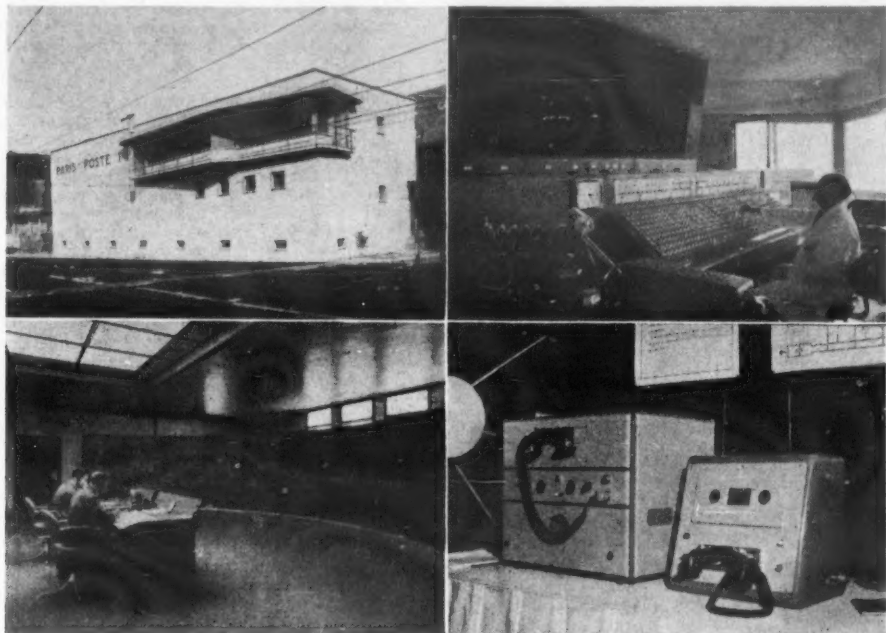
Coal Saving

The scheme was decided upon in 1954 and was begun in the following year as part of the second

which has already shown itself capable of emulating the best performances of 1,500-volt d.c. locomotives on the *Mistral* or *Sud Express*. Lighter passenger trains and fast freight will be handled by 41 Bo-Bo locomotives of the 12000 class, which have already shown their worth on the Lille-Basel line, and by 20 Bo-Bo machines of the new and lightweight 16501 type; these have a remarkable power output and will be seen heading suburban trains via Chantilly. They are equipped with single motors on each bogie; the drive is to all four axles and the power output 3,500 h.p. Then there will also be 20 Co-Co units of the 14000 series for the haulage of the heavy coal trains of up to 3,000 tons. The 141 rectifier locomotives mentioned will replace 346 steam locomotives.

Control Rooms

There will be two electrical control rooms, one at Douai and the other in Paris. From them remote control will be exercised over seven new substations in addition to those at Lille and Valenciennes already in service. Other new works include resignalling in Paris, Douai and Lille, with new boxes; relaying in the important stations; a



Paris-Lille electrification of the S.N.C.F.: The new Poste 1 signalbox at Gare du Nord, Paris; signalman's panel and diagram at Gare du Nord; below, the electric control room at Douai; and, right, telephone sets provided for passenger conversations to the external telephone system on certain Paris-Lille trains

plan of modernisation and equipment. It naturally incorporated the use of single-phase alternating current at 25,000 volts and the industrial frequency of 50 cycles already employed between Valenciennes and Thionville, extended at the end of 1955 from Valenciennes to Lille and during the next two years from Thionville to Basel. The latest extension will save more than 300,000 tonnes of coking coal a year and so assist the national balance sheet. There will also be a small saving of diesel oil with the replacement of five diesel railcar sets.

Coal from the north will reach Paris at high speed in trains of 2,000 to 3,000 tons at an economic rate. Economies of staff and maintenance are also certain. Quantifying the advantages in money terms, the savings will total 3.8 milliards of francs per annum for an expenditure on the scheme of 26 milliards, showing a return of nearly 15 per cent on the capital investment.

Improved Speeds

The benefits to passengers will include 15-coach trains running at maxima of 87 m.p.h. with expresses covering the 258-km. (160-mile) journey in 2 hr. 15 min. immediately and in 2 hr. 10 min. (or 73.8 m.p.h.) from the summer timetable. From June onwards the best expresses will be composed of stainless steel coaches; on those trains business passengers will be able to send or receive telephone messages in a manner similar to our own experimental telephone conversation with London from a train near Charleville in a demonstration four years ago. From the June timetable most of the Paris-Chantilly-Creil suburban trains will be electrically operated and will save 10 minutes over the running times of the very lively steam nine-car push-and-pull sets, despite an additional stop at Garges, between Pierrefitte and Villiers-le-Bel; at Garges over 5,000 houses will be served by the new station.

The fast and heavy passenger trains will have allocated to them 20 locomotives of the Bo-Bo wheel arrangement in the 16000 class, a machine

complete remodelling of the telecommunications system; and rebuilding of the passenger stations at Creil, Amiens, Arras and Douai. During 1959 a further stage will be the putting into service of electric traction equipment between Pierrefitte and Noisy-le-Sec; Lens-Fouquereuil-Lapugnoy; Pont-à-Vendin-Haubourdin; and the station at Amiens. The Paris-Lille scheme by no means represents all the electrification work carried out in 1958—no less than 531 km. (330 miles) has been completed and brings the total to 6,287 km. (3,906 miles) of line, over which roundly 47 per cent of S.N.C.F. traffic is now hauled electrically.

Helping French Industry

As Monsieur Philippe Dargeou, general manager of the S.N.C.F., pointed out in a speech in the Lille Town Hall at the opening ceremony, the Paris-Lille-Strasbourg triangle, with its extension to Basel, comprises railways and branches of 1,900 km. in length or about one-twentieth of the entire French system. On it, however, there is carried about one-third of the total freight traffic. The S.N.C.F., by its improvements to the transport system of the region, was helping the industrial north, the spearhead of French economy in the new competition, difficult no doubt, but rich in promise, that opened with the setting up of the Common Market.

Although the benefits of electrification for the passenger were so great, those on the freight side were much more important. With greater speed, and loads of up to 3,000 tons for special block trains and 2,400 tons for ordinary freight trains they would overcome the bottleneck on the Arras-Longueau section, where, under steam, traffic closely approached saturation point. He concluded by referring to the third five-year plan (1957-1961), with its provision for electrification from Creil to the Belgian frontier; he also mentioned the proposals that were in hand for extension to Dunkerque, the most important port of the North and North East.



Electric locomotive No. E 5000 built for Southern Region Thanet electrification at Doncaster. This third-rail 660-volt unit is of 2,500 h.p.

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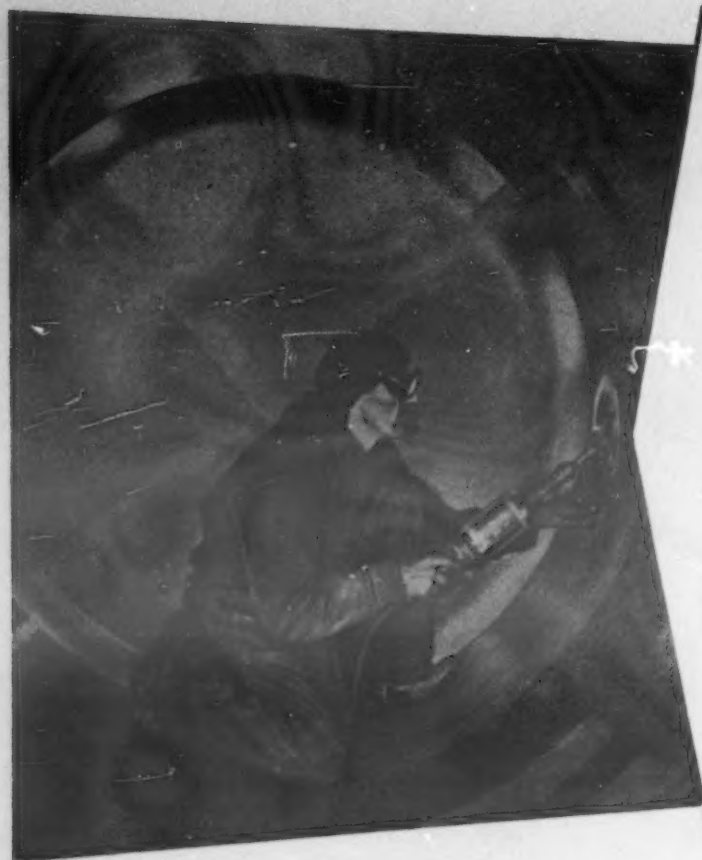
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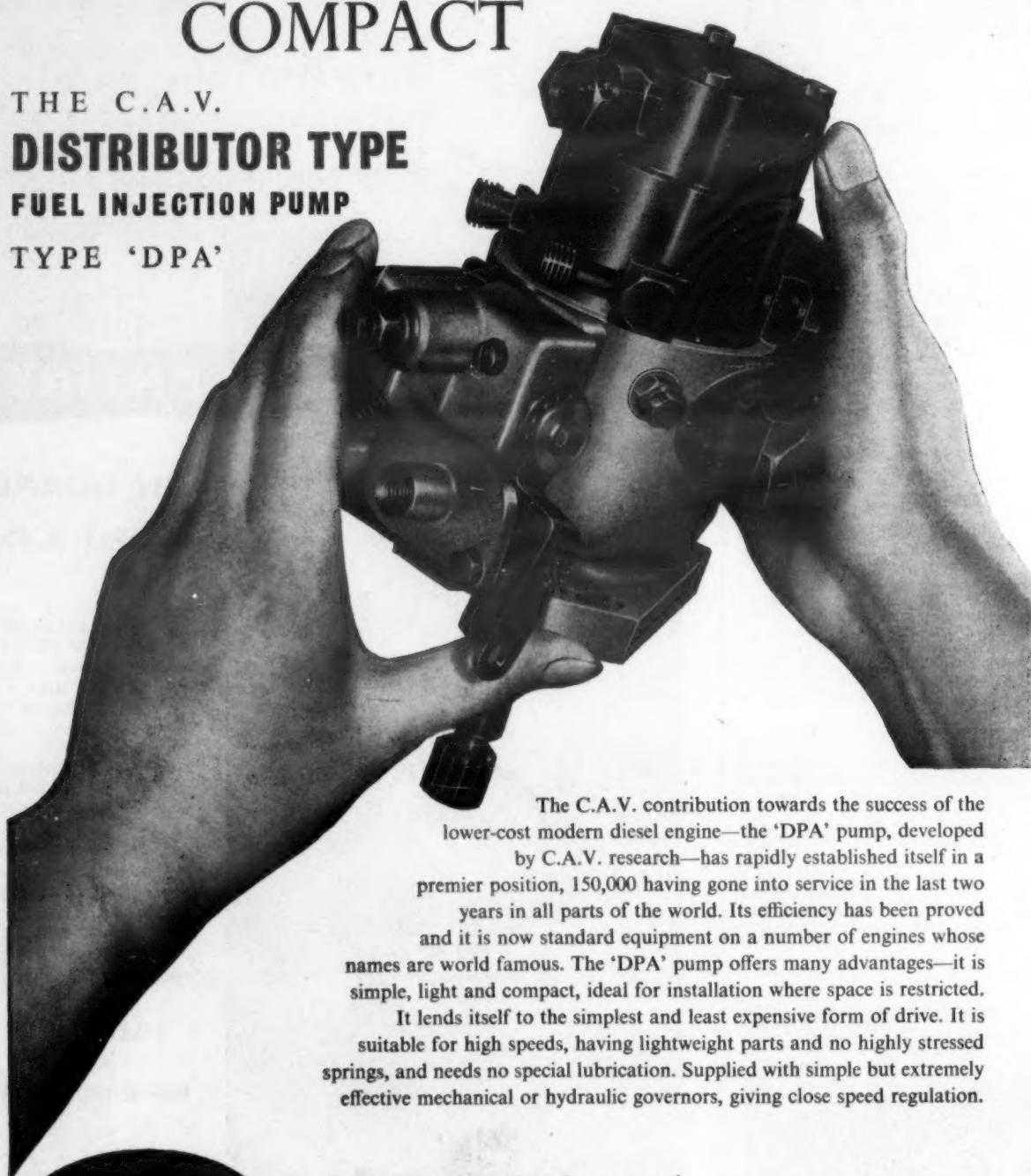
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AP939

ANOTHER SIT-DOWN STRIKE

Italian Road Haulage Stoppage Threatened

SUSPENSION indefinitely of all transport of goods by road in Italy was threatened by the Italian Federation of Road Transport Companies earlier this week unless the Government agreed by January 16 to amend the new Highway Code so that it bore less heavily on the road transport industry. As we recorded in our issue for January 3, the new *Codice della Strada* introduces, among other regulations, speed limits and minimum distances between moving vehicles to come into effect on January 28 and maximum weight and dimensional limitations which, through amendments already made, would not be fully effective until 1963.

Although the date for the introduction of the first of the new regulations is January 28, the strike was timed to start on January 16 because until that date vehicles are permitted to be used without 1959 road taxes becoming due.

THE NEW C.I.E.

(Continued from page 9)

remaining defects by the manufacturers will provide better availability of locomotives and reliability of service. We propose to extend the dieselisation programme to the former Great Northern portion of the undertaking. Our ultimate object is to eliminate steam from the system.

A priority in our reorganisation will certainly be the establishment of a development and operational research unit to evolve better methods and equipment in all branches of our technical activities. One pressing problem for such a research team will be the development of containers adaptable to the needs of particular grades and traffics and easily interchangeable between road and rail vehicles. We have recently been asked by the National Farmers' Association to examine the possibilities of a C.I.E.-sponsored cross-channel vehicle ferry service, similar to that now operating between Larne and Preston. We are at present examining the feasibility of this project but we have not got far enough to say yet what the implications for us would be.

Retaining the Railways

We are convinced that for any foreseeable time railways are an essential factor in the development of the national economy. The losses on some branch lines and secondary lines could be reduced by further economy measures and by securing more traffic from local traders. Yet there is no doubt that many of these lines could never be made as economical as substitute road services. For example, the direct cost of operating the Harcourt Street—Bray railway line was £77,000 per annum, and the receipts were only £24,000. There is no point in throwing good money after bad. In such cases we will have to accept that it is more sensible to abandon the railway and, instead, develop our road services. Such considerations have persuaded us to close also the Cavan—Leitrim branch. These steps alone will save us some £80,000 per annum.

In the long run it is upon the general body of C.I.E. staff that the success or failure of the board's policies will largely depend. Effective consultation with employees cannot be commanded; it is essential that there should be a strong element of spontaneity in such consultations. We are offering the trade unions the fullest joint consultation but as I have been at pains to make clear this does not mean joint management—nor the semblance of it. We shall do everything possible to secure, retain and foster the goodwill of the unions, but we expect realism from them.

We have recently received claims from two unions catering for different branches of the staff. If conceded, these claims would amount to nearly £800,000 per annum. Such claims are quite unreal in concept; the money is just not there. It will have to be earned by our combined efforts.

Public Relations

Staff difficulties have been aggravated by public criticism of C.I.E. which has been intense. Not all of it has been well-informed—to say the least of it. One of the first tasks which the new board must undertake is to establish confidence with the public. In my opinion the first step in this direction is to make well known a consistent and co-ordinated policy; to tell the public what we are endeavouring to do and keep them informed of our progress. Since I became chairman of the board, I have observed that virtually any effort at rationalisation of the services has evoked opposition. It has to be recognised that there must be modernisation of practices and it is not sufficient justification for existing practices merely to say that they give employment or that to change them would inconvenience somebody.

Forthcoming Events

January 19.—Institute of Transport (Sheffield). Annual dinner and visit of president. At Royal Victoria Hotel, Sheffield. 7 p.m.
January 20.—Institute of Transport (Humbly Grove). Paper by Mr. W. MacGillivray, "The Nuclear Propulsion of Merchant Ships." At Samman House, Bowdley Lane, Hull. 7.30 p.m.
Institute of Transport (Visual Aids). View and discussion of films "Mishap," "Single Line Working," and "Time, Space and Effort." At 80 Portland Place, W.1. 6.15 p.m.
Institute of Transport (Scottish). Paper by Messrs. David Kerr and W. Crawford, "Postwar Shipbuilding in Scotland." At 46 Bath Street, Glasgow. 8 p.m.
Institute of Transport (West Midlands). Paper by Dr. W. S. Barry, "The Adaptation of Training and Education to the Characteristics of Transport Undertakings." At Control Tower Building, London Airport. 6.15 p.m.
Institute of Transport (Humbly Grove). Paper by Mr. John H. Bustard, "The Transport Ferry Service." At Chamber of Commerce and Shipping, Samman House, Bowdley Lane, Hull. 7.30 p.m.
Industrial Transport Association (London). Paper by Mr. C. Courtney Cramp, "Salesmanship and Transport." At Royal Society of Arts, John Adam Street, W.C.2. 6.30 p.m.
Institution of Mechanical Engineers (Automobile). Discussion "The Effect of Motorways on Vehicle Design and Durability." At 1 Birdcage Walk, S.W.1. 6 p.m.
January 21.—Institute of Road Transport Engineers (Metropolitan). Paper by Mr. A. R. J. Van der Goes, "Continental Trends in the Design and Manufacture of Heavy Commercial Vehicles." At Royal Society of Arts, John Adam Street, W.C.2. 6.30 p.m.
Railway Students Association. Paper by Mr. K. A. Henderson, "Choosing a Medium—Some Problems Confronting a Transport Manager." At London School of Economics, Houghton Street, W.C.2. 6.15 p.m.
January 22.—Institute of Transport (Berks, Bucks and Oxon). Biennial dinner and visit of president. At George Hotel, Reading. 7 p.m.
Institute of Transport (South West Lancashire). Paper by Mr. A. F. Clark, "Freer Traffic—A Question of Common Interest." At Town Hall, Widnes. 6.45 p.m.
January 23.—Institution of Mechanical Engineers. Thomas Lowe Gray Lecture. Paper by Mr. H. R. Howells, "Marine Refrigeration." At 1 Birdcage Walk, S.W.1. 6 p.m.

ROAD VEHICLE INDUSTRY

New Look for Bedford Van

COMPLETELY new front-end appearance and a number of other improvements are among changes introduced by Vauxhall Motors, Limited, for the Bedford 10-12 and 15-cwt. van range. Principal changes include a new clean-looking grille, a one-piece curved windscreen, larger windscreen wipers, flashing direction indicators, better seals at the rear of the sliding side doors and a revised instrument panel. The latest improvements, designed to give additional safety

and the latest overflow calibration mechanism are said to provide every essential test for distributor and in-line pumps. It embodies the Hartridge patent time-saving electronic phasing and the special overflow calibration system comprises overflow fuel containers on each test injector and short connecting pipes necessary for accurate checking of small-output pumps. The new machine is suitable for testing injection pumps up to six elements. It has a range of infinitely variable speed from 40 to



Interior and exterior views of one of seven 41-seat Roe-bodied Leyland Tiger Cubs recently delivered to Lincoln Corporation. Bodies are notable for having two Peters electropneumatic doors and equipment for one-man operation or, with conductor, standing room for 17

and ease of control, are part of a long history of progressive development since the Bedford van was introduced seven years ago, in which time more than 110,000 of the type have been produced, many of them for conversion to passenger-carrying and specialist vehicles.

4,000 r.p.m. without clutch or belt changes; the test tubes are illuminated for easy reading and quick-action pump mounting clamps are available.

B.P. Advanced Drivers

IN order to encourage all employees to aim at a higher standard of driving, the British Petroleum Co., Limited, has announced that it will meet all fees in connection with staff wishing to take the driving test of the Institute of Advanced Motorists. Fees of those who have already taken the test are also being refunded.

India Tyre Depots

TO provide even more speedy and efficient service for replacement tyres in the southern area, the India Tyre and Rubber Co., Limited, has opened a large modern depot at South Street, Romford, Essex (telephone number Romford 43671). This depot will in the main take over the work carried out by the Hackney depot at White Post Lane, which will be closed down. A number of the Hackney depot accounts will also be serviced from Kingsbury. The opening of a Luton depot for India replacement tyres is also announced; the address is Taylor Street, Luton (telephone number Luton 6345) and this depot will provide service for Hertfordshire and South Bedfordshire.

Edinburgh Eschews Elegance

DISCOUNTING the criticism of the less-elegant appearance of solid-riveted outer panelling of buses, Edinburgh Corporation Transport Department is to adopt this method of construction, which is common in America and Europe, for the bodies of the 50 45-seat Leyland Tiger Cub single-deckers due for delivery during the next few months. One vehicle of solid-riveted construction has been operated in Edinburgh for the past seven years and has proved robust, reliable and extremely cheap to maintain. It will be recalled that the Tiger Cub ordered are to have the recently introduced Leyland O375 diesel engine of 110 b.h.p. driving through semi-automatic centrifugal clutch and four-speed Pneumo-Cyclic gearbox and 24-point air-operated automatic chassis lubrication.

Lucas Roof-Mounted Spot Lamps

ROOF-MOUNTING spot lamps that have been in limited production by Joseph Lucas, Limited, for about two years principally for car rally drivers have now been put into full production to meet a growing demand for fitting to



The restyled Bedford light van to which reference is made in the opening paragraph

close range. Both main and dipped beams are claimed to have sharply defined upper zones which when properly used will not cause dazzle to on-coming traffic.

Cummins Diesel International

PROMOTION of sales and service of Cummins diesel engines in international markets has been vested in a new company, Cummins Diesel International, Limited, with headquarters at Nassau, Bahamas. The new company is a wholly owned subsidiary of Cummins Engine Co., Inc.; it will be independently staffed and operated and will shortly be establishing offices in Europe and South America. It will be recalled the parent American company established a wholly owned manufacturing subsidiary, Cummins Engine Co.,



Seddon DD8 in the service of Cyprien-Fox Transport has Gardner 6LX diesel engine, double drive, balance-beam suspension and power-assisted steering. Payload is 16½ tons

Limited, at Shotts, Lanarkshire, in 1956, whose production, which was started in May, 1957, is largely exported.

British Motor Show in Lisbon

ONE of the main features of the British Trade Fair in Lisbon this year, to be held from May 29 to June 14, will be an all-British motor show featuring cars, commercial vehicles, tractors, components and accessories and transport service equipment. This was announced by Mr. W. P. N. Edwards, director of the Federation of British Industries and managing director of British Overseas Fairs, Limited, speaking in Lisbon recently. The fair, which will represent all the principal branches of British industry, has been staged to coincide with the Portuguese Government's second six-year development plan which envisages an expenditure of about £375 million.

New Hartridge Test Bench

RECENTLY added to its range of diesel servicing equipment by Leslie Hartridge, Limited, Buckingham, is a new fuel-injection pump test bench, claimed to be the first in the world to have vacuum and pressure gauges and back-leakage measuring glasses built into the machine. These

police and breakdown vehicles, ambulances and water craft. Two models are available, RMS576 giving an 80,000-candle power long-range beam at £12 12s. complete and RMS700 with a 10,000-candle-power beam which costs £14. Both are operated from inside the vehicle through a universal ball-joint mounting and a convenient handle that houses a push-push switch and has provision for carrying a spare bulb.

Molybdenised Chassis Lubricant

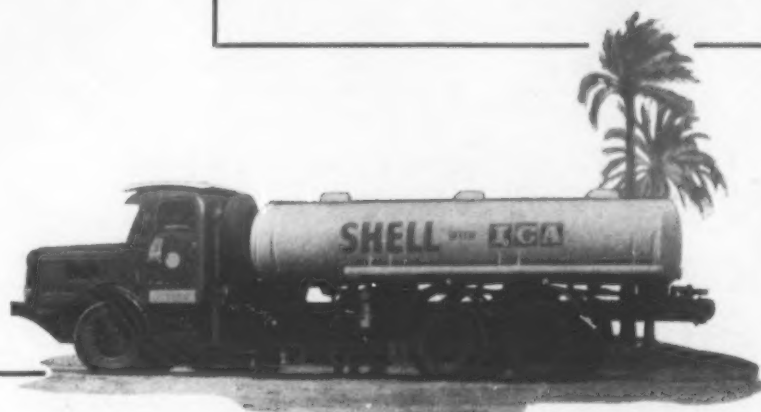
CONTINUALLY expanding sales of molybdenised industrial greases for vehicle chassis lubrication during recent months has led to the introduction by Rocol, Limited, of Molspeed grease, which has been specially designed for car and commercial vehicle chassis lubrication. Molspeed has a bentone base, which makes it resistant to high temperatures and water repellent, and contains adequate molybdenum disulphide for general chassis work. It has a 320 penetration making it suitable for both hand greasings and pressure systems. The main advantages of Molspeed grease are claimed to be a much higher resistance to pressure, provision of boundary lubrication between working surfaces and that scraping action does not entirely remove the lubricant. The retail price is 6s. 8d. per 1-lb. tin.

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shop on a first-class railway. Subsequently they must have had at least seven years' experience as a fitter, leading hand or chieftain in a running shed on a first-class railway. They must be thoroughly acquainted with all branches of running shed fitting, and with periodical examination of locomotives.

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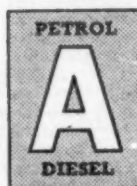
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LETTERS TO THE EDITOR

South Lancashire Trolleybuses

The Editor is always glad to receive letters from readers on subjects germane to the transport industry, but these should be written as concisely as possible. The opinions expressed therein must not, however, be regarded as having editorial endorsement. Where correspondents desire to use a nom-de-plume it is essential that the Editor should be informed of the name and full address of the writer as indication of good faith.

SIR,—The correspondence in your columns regarding the composition of the South Lancashire trolleybus fleet may be clarified by the extract from a 1955 official fleet list set out in the accompanying table.—Yours faithfully,

H. BREARLEY.

9 Marlborough Road,
Idle, Bradford, Yorks.

SIR,—For some considerable time I have been pursuing research into the history of the South Lancashire and St. Helens tramway undertakings, and would like to comment on the excellent

July, 1930. The through Saturday evening service from Ashton (originally Haydock) to Leigh operated from April, 1903, to July, 1930. All types of car were used on it. Similarly the Swinton—Atherton trams and the Farnworth—Atherton trolleybuses ran through to Leigh on Saturdays from 1906 to 1931 and 1933 to 1939 respectively. There was never a through tram service from Atherton to St. Helens. I agree entirely with Mr. Dunbar's remarks about through services in the Walkden area.

While it is correct that Farnworth took over from Bolton the operation of part of its system on June 2, 1902, it had already been operating two other routes since January 9, 1902. Farnworth had 13 cars, not eight; they became S.L.T. nos. 46-58, and six, plus two cars of the same type built later for the S.L.T., were sold to Bolton in 1933. The S.L.T. tram fleet totalled 89 cars at its maximum (immediately after the seven L.L.R. cars were transferred to S.L.T. stock) but 81 passenger motor cars, one motor water car, and about four

SOUTH LANCASHIRE TROLLEYBUSES

Bus No.	Karrier	Reg. No.	Chassis	Year	Seats	H.P.	Body	Elect. equipment
60	Karrier	FTD452	W 50034	1943	56	80	Weymann	G.E.C.
61	2-axle	FTD453	W 50035	1943	56	80	Weymann	G.E.C.
62	"	FTD454	W 50036	1943	56	80	Weymann	G.E.C.
63	"	FTD455	W 50037	1943	56	80	Weymann	G.E.C.
64	"	FTE152	W 50063	1944	56	80	Weymann	E.E.
65	"	FTE153	W 50064	1944	56	80	Weymann	E.E.
66	Sunbeam	HTD863	MS2 60001	1948	64	115	Weymann	Met. Vickers
67	2-axle	HTD864	MS2 60002	1948	64	115	Weymann	Met. Vickers
68	"	HTD865	MS2 60003	1948	64	115	Weymann	Met. Vickers
69	"	HTD866	MS2 60004	1948	64	115	Weymann	Met. Vickers
70	"	HTD867	MS2 60005	1948	64	115	Weymann	Met. Vickers
71	"	HTD868	MS2 60006	1948	64	115	Weymann	Met. Vickers

articles in your issues of November 1 and December 6, 1958, which I have just seen.

The "St. Helens, Leigh and Bolton Light Railway" was proposed in 1898 by Lancashire Light Railways, and was to be standard gauge. The 3 ft. 6 in. gauge system proposed in 1896 was a purely local scheme, of the "Leigh and Atherton District Tramways" for about seven route-miles. With reference to through running at Haydock, mentioned also by Mr. Dunbar in your issue of November 22, the St. Helens company took over operation of the Ashton—Haydock section about 1909. The S.L.T. participated in this Ashton—St. Helens service only from the autumn of 1927 to

trailer cars were owned altogether. The trailers were used during the 1914-18 war to carry prisoners of war, and their origin and fate is extremely obscure.

Trolleybus Operation

Turning now to the trolleybuses, I would like to point out that it was by no means impossible for highbridge trolleybuses to pass under the bridge in Cleggs Lane, Little Hulton. In the last year or two, the Leylands and the Karrier W-type ran through to Farnworth quite often. The ex-demonstrator Guy, No. 47, though very little used after 1945, was not delicensed until shortly before withdrawal in 1951. The 66-71 class had "Karrier" makers' plates and were always described on their road-fund licences as Karriers, not Sunbeams. Though it is correct that Nos. 31-46 were built for the Leigh—Bolton service, their seating (48) soon proved inadequate, and the earlier vehicles were transferred to that service, until the advent of sufficient highbridge vehicles. Nos. 31-46 went to the Atherton—Farnworth and Atherton—St. Helens services.

Lastly, a few very minor corrections. The bus service 48 which replaced the Leigh—Lowton trams in 1933, has always been joint L.U.T. and Leigh Corporation. The power station at Atherton was L.U.T., not S.L.T. property, to avoid a clause in the 1900 Act which required the S.L.T., if it built a power station at all, to build it in Twist Lane, Leigh. The one-way trolleybus loop in Farnworth was opened in 1936, not 1932. The luncheon on September 1, 1958, was to celebrate the end of the S.L.T., not the participation of Leigh Corporation in the Leigh—Bolton service. Incidentally, the S.L.T. having ceased to exist, this special last trolleybus ran with L.U.T. as its legal owner. The offices of the S.L.T. and S.L.E.T. and P. and associates were at first all at Liverpool, and were transferred to Atherton in 1906, after the formation of the L.U.T.

Changes since the article was written are that transfer facilities at Atherton for the Leigh—Mosley Common service have been restored; that the delivery of new Leylands has enabled all the ex-trolleybus services to be operated by new vehicles, apart from peak-hour extras, and that the whole of the overhead line has now been removed.—Yours faithfully,

E. K. STRETCH.

231 Wardour Street,
Atherton.

Misbehaviour by Passengers

SIR,—Your editorial comment in the issue of January 10 on misbehaviour by passengers is a fair one, but the statement that no undue importance need be attached to recent action may be inadvisable.

The sit-tight passenger is not so very different from the man who boos in the theatre. He may be a thorough nuisance, but at least he is there. More important, he may possibly be a danger signal, voicing the opinions of others, who, in a dignified and unobtrusive manner, leave the auditorium, never to return.—Yours faithfully,

F. A. RULER.

48 The Knoll, Hayes,
Bromley, Kent.

The Talylyn Railway calendar for 1959 (price 2s. 6d. post free from Mr. R. K. Cope, Brynglas, Beckman Road, Pedmore, Stourbridge, Worcestershire) is as usual a most attractive production. It includes six pictures of this Welsh 2 ft. 3 in. gauge railway as revived by its enthusiastic supporters, each picture covering two months of the year. There is a picturesque scene with locomotive No. 1, Talylyn, on Dolgoch viaduct, the ex Corris 0-4-2 Edward Thomas under the mountainside near Brynglas, No. 6, Douglas, at Abergynolwyn, a train with open coaches at Dolgoch Station, another scene with Talylyn at Abergynolwyn, and finally a magnificent view of No. 4, Edward Thomas, at Brynglas Station.

OFFICIAL NOTICE

MANCHESTER CORPORATION

WORKS SUPERINTENDENT

QUALIFIED Works Superintendent required by Manchester Corporation Transport Department to take charge, under the works manager of the department's central repair works, salary £1,025 × £50 to £1,175.

Forms of application and details returnable by Saturday, January 31, 1959, obtainable from the General Manager, 55 Piccadilly, Manchester, 1.

[Another Official Notice appears on page 13]

SOCIAL AND PERSONAL

New Dodge Appointment

MR. WENDELL S. CLOUGH has been appointed managing director of Chrysler Motors, Limited, and Dodge Brothers (Britain), Limited, following the retirement, already announced, of Mr. W. Wallace. Under a new international and regional development and marketing organisation, Chrysler International S.A., with headquarters at Geneva, the Kew companies will report to the regional director for the Commonwealth, Mr. K. H. Kingsley.

Mr. G. Wynne Davies, O.B.E., M.A., M.Inst.T., commercial officer, Southern Region, B.R., whose death in Switzerland on January 5 was briefly recorded in our last issue, was educated at Repton and Clare College, Cambridge. He joined the Southern Railway in 1926, and in 1928 was selected as one of the first of its cadets. He was appointed assistant to the road transport liaison officer in 1932; assistant to the London (East) divisional superintendent in 1935; and general purposes officer to the general manager in 1938. In the following



The late Mr. G. Wynne Davies

year he was attached to the secretary's office, subsequently becoming assistant secretary to the company. Mr. Wynne Davies had held a commission in the Royal Engineers (Supplementary Reserve) and accordingly proceeded to France in 1939, with G.H.Q., B.E.F. Subsequently he served on the staff of G.H.Q. Home Forces, A.F.H.Q., and H.Q. Eighth Army in North Africa and Italy, during which time he was mentioned in dispatches four times and made an O.B.E. (Military Division). He left the Army in September, 1945, with the rank of colonel. On his return to the Southern Railway he became assistant public relations and advertising officer, until he assumed the responsibilities of the public relations and advertising officer, Southern Region. In 1948 he became publicity officer to the Railway Executive, but in 1953 returned to the Southern Region as assistant commercial superintendent (later assistant commercial manager), becoming commercial officer in the autumn of 1958.

Mr. W. J. Evans has been elected, unopposed, to succeed Mr. A. Hallworth as general secretary of the Associated Society of Locomotive Engineers and Firemen when Mr. Hallworth retires in 1960.

The late Mr. H. C. Merrett, formerly a director of the National Omnibus and Transport Co., Limited, and subsequently a director of the United Counties Omnibus Co., Limited, and other industrial companies, left £198,801 net (duty paid, £107,605).

Two British Road Services appointments are announced: Mr. E. Froggatt, divisional staff officer, becomes West Yorkshire district manager in the North Eastern Division, and Mr. I. M. Colquhoun, hitherto staff superintendent, Bristol Omnibus Co., Limited, becomes divisional staff officer, North Eastern Division.

General manager of the new Dover-Calais service of European Ferries, Limited, due to commence next week, is Mr. E. G. O. Ridgwell, who until November last year was manager of the transport and packaging department of the General Electric Co., Limited. He was appointed to the latter post in 1953. Mr. Ridgwell joined G.E.C. in 1946, and early in 1948 was appointed to deal with packaging problems. In 1950 he was appointed to the new position of packaging controller and represented B.E.A.M.A. on the specialist packaging team which went to America in 1949 under the sponsorship of the Anglo-American Council on Productivity. Reference to the Dover-Calais ferry service appears on page 4.

Mr. Geoffrey L. Lawrence has been appointed chief engineer of the Zenith Carburettor Co., Limited, with effect from January 1. He joined the company in 1949, having spent some years with the Motor Industry Research Association.

Mr. R. M. Walker retired on December 31 as general sales manager of the garage equipment division of Laycock Engineering, Limited, a member of the Birfield Group. He is succeeded by Mr. F. Oldfield as garage equipment sales manager.

We deeply regret to record the sudden death of Mr. James William Watkins, member of the British Transport Commission, at the age of 68. An editorial appreciation appears on page 1 and a portrait and biography on page 9. A memorial service will be held at St. Pancras Church, Euston Road, N.W.1, at noon on January 21.

Mr. C. S. Wood, A.C.I.S., assistant treasurer, Eastern and North Eastern Regions, has been appointed treasurer, Eastern Region, B.R. Until such time as a treasurer is appointed in the North Eastern Region, Mr. Wood will supervise the operation of the North Eastern Region's treasurer's department.

We regret to record the death of Mr. Arthur E. Wells, formerly a director of E. Wells and Son, Limited, Rotherhithe, a pre-nationalisation haulage business.

We deeply regret to record the death of Mr. A. L. Stewardson, joint managing director of the Equipment and Engineering Co., Limited. He was 61. His passing leaves a great gap in the circle of friends among contractors to the bus industry.

During the congress of the Scottish Road Passenger Transport Association, to be held at Turnberry from April 14 to 17 next, Mr. John Cooper, general manager, Leicester City Transport, will read a paper, "Management Accountancy in Road Passenger Transport."

Mr. T. R. Hawkes, M.Inst.T., regional accountant, Eastern and North Eastern Regions, B.R., retired at the end of 1958 after more than 48 years' service. He entered railway service in the locomotive accountant's department of the Great Eastern Railway in 1910. He saw service with the



Mr. T. R. Hawkes

Royal Engineers in 1914-18. In 1927, Mr. Hawkes moved to the headquarters office of the chief accountant, L.N.E.R., and was responsible for the expansion and development of mechanised accounting. Following a period as statistical and staff assistant to the chief mechanical engineer he returned to the chief accountant's department in 1939. Appointment as assistant to the chief accountant came in 1942, to be followed by that of senior assistant in 1947, and upon nationalisation of the railways in 1948 Mr. Hawkes assumed the position of assistant accountant, Eastern and North Eastern Regions. He was appointed regional accountant for both regions in September, 1950. Mr. Hawkes has been a director of B.T.C.-controlled or associated bus and shipping services.

The British Overseas Airways Corporation announces the following new appointments in the Corporation:

Mr. Gilbert H. C. Lee, at present general manager, Western routes, to be chief commercial manager.
Mr. J. Ross Stainton, at present general manager, Eastern routes, to be general manager, Western routes.
Mr. Basil W. Bamplyde, at present with B.O.A.C., Associated Companies, Limited, to be general manager, Eastern routes.

The following additional appointments have been announced in connection with the Western Region traffic reorganisation:

Mr. W. J. Hartnell, to be district traffic superintendent, Exeter.
Mr. F. G. Dean, to be district traffic superintendent, Plymouth.
Mr. D. L. Pride, to be district traffic superintendent, Birmingham.
Mr. D. C. I. Reynolds, to be running and maintenance officer, divisional traffic manager's office, Bristol.
Mr. C. L. Newbury, to be staff assistant, divisional traffic manager's office, Bristol.
Mr. M. G. Cooper, to be commercial officer, divisional traffic manager's office, Birmingham.
Mr. D. S. Hart, to be operating officer, divisional traffic manager's office, Birmingham.
Mr. C. R. L. Rice, to be running and maintenance officer, divisional traffic manager's office, Birmingham.
Mr. J. J. Donovan, to be staff assistant, divisional traffic manager's office, Birmingham.

Mr. A. Newman, assistant traffic manager since 1956, has been appointed traffic manager of the Central S.M.T. Co., Limited. Before entering the transport business with W. and R. Dunlop, Limited, bus proprietor, Greenock, in 1937, he had served with the India Tyre and Rubber Co., Limited. In 1940 he became general manager of W. and R. Dunlop and two years later managing director. When the services were acquired by Western S.M.T. in 1945, Mr. Newman remained with his former company as manager. Transferred to Kilmarnock in 1948, he became assistant traffic manager of Western S.M.T. in the following year and returned to Greenock in that capacity in 1951 to take charge of the services operating in the Clyde area.

The British Railways discussion group which meets weekly at Peterborough Technical College, has an ambitious programme arranged for the second half of the 1958-59 session.

On Wednesday this week the subject was "A Trader Looks at the Railway," introduced by Mr. L. A. Carey, group transport manager, Reckitt-Colman-Chiswick, Norwich, and on succeeding Wednesday the subjects are: "Diesel and Diesel Electric Tracting," by Mr. K. J. Cook, chief mechanical and electrical engineer, Eastern Region, Doncaster; "Traffic Operation—Can it be Work Studied?" by Mr. D. Bowick, assistant, work study section, regional establishment and staff officer, Liverpool Street; "Shipping Lines," by Mr. C. M. Squarey, general manager, Ocean Travel Development; and "The Catering Services," by Mr. C. W. Roundell, principal assistant, refreshment rooms, British Transport Hotels and Catering Services, London.

Mr. F. E. Wilkins, M.B.E., T.D., senior executive assistant in the office of the press and publications officer, has been appointed a principal executive assistant.

Mr. G. Fernyhough, operating manager (Country buses and coaches) and Mr. W. I. Kirchner, divisional engineer (Country buses and coaches) have removed their offices from Reigate to London Transport headquarters at 55 Broadway, S.W.1.

KARRIER 'BANTAM'

4-5 TON TRACTOR-TRAILER

with petrol or diesel power-unit
and choice of coupling gear.

The Bradford Model Milk Co.
—by whose courtesy the photograph
is reproduced—employ these
diesel-engined 'Bantams' to
transport bottled milk and orange juice.



SPEEDS UP DELIVERIES!

THE KARRIER 'BANTAM'

tractor-trailer combination—modern version of the original 'mechanical horse' designed and built by Karrier engineers in 1930—is a firmly established favourite in the industrial transport field. Hauling a full five-ton load with speed and economy, its manoeuvrability makes it ideal for quick work in busy city centres, and as the tractor can operate, if need be, with any number and variety of detachable trailers, no time is lost in loading or unloading.

'BANTAM' LOW-LOAD 2-3 TONNERS

with petrol or diesel engine to
choice are also available



'BANTAM' 2 TON TRIPPER



'BANTAM' MOBILE SHOP

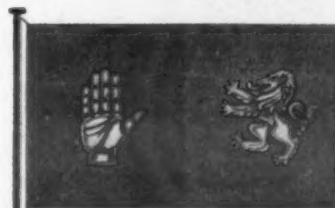
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House flag flown by ships of A.C.C.S.

• DAILY SAILINGS

* * * *

• ENQUIRIES INVITED

ENGLAND, SCOTLAND & N. IRELAND

Ports of Shipment being: Preston (Lancs.), Larne (Co. Antrim) and Ardrossan (Ayrshire)

BELFAST: 35/9 Middlepath St. Belfast 59261/5	ARDROSSAN: (Ayrshire) Harbour Street, Ardrossan-Saltcoats 1911/2
LARNE: (Co. Antrim) Bay Road. Larne 2331/2	GLASGOW (C.2): 10 Bothwell St. City 6997/8
PRESTON: (Lancs.) The Dock. Preston 86742/4	LONDON: (Depot) Eland Rd., S.E.15. New X 4885/7
MANCHESTER (2): 270/1 Royal Exchange Buildings. Blackfriars 9287/9	LONDON: (Offices) 79 Dutton Rd., S.E.1. Bermondsey 4881/4
BRISTOL (1): 61 Park St. Bristol 25435/6	

COMPANY MEETING

HAWKER SIDDELEY GROUP LIMITED

ANNUAL REPORT AND STATEMENT OF THE CHAIRMAN

SOME months ago an American survey classified our company as the twelfth largest industrial organisation in the world, outside the United States. When one considers that our assets now exceed £200 million, our annual sales are running in excess of £250 million and our employees number around 100,000, our position and our responsibility as a world leader in industry comes into perspective.

Dealing with Canada first, we are disclosing for the first time details of our investment in Canada. This is shown at cost which was £13,062,486. It is interesting to compare this figure with the Hawker Siddeley share of the Canadian net assets which now amounts to £29,329,055. This remarkable growth has arisen because our profits earned in Canada have been ploughed back into the business. It is noteworthy also that on the basis of current market quotations in Canada, the Hawker Siddeley investment in A. V. Roe Canada, Ltd., has a value of approximately £26,000,000—just about double our original investment. To turn now to the United Kingdom, as I have said, this has been a year of consolidation marked by the absorption of the former Brush Group into the new Hawker Siddeley Industrial Division. The Brush headquarters organisation has been abolished.

Aircraft

All our aviation interests have been merged into one new Aviation Division. To give you a picture of the strength of this new Division, I can do no better than to tell you that of the 182 aircraft flying at 1958 Farnborough Air Show, the show window of British

aviation, no fewer than 129 came from Hawker Siddeley.

At home our Armstrong Whitworth Argosy, the world's first pressurised turboprop freighter, is just beginning its flight trials. This aircraft has been financed wholly by the Group as a private venture and it is designed for use as a freighter. We are hopeful of receiving a production order for the military version of the "Argosy" from the Ministry of Supply for R.A.F. Transport Command.

When the policy decision was taken some years ago to expand and diversify, your Group's interests were then mainly in Aviation. That situation has been completely changed and our industrial activities now account for about 70 per cent of our total net assets.

Our order book is substantial, our factories, plant and equipment are up to date and we are confident in our ability to continue making good profits in the future. You will not, at this stage of the Group's financial year, expect me to give you more than a general indication of how we are faring in it. I am, however, glad to tell you that compared with the same period last year, our turnover and profitability have been maintained and, subject to unforeseen circumstances, we may expect that the results of the current year will be satisfactory.

With a good year behind us and a promising year ahead of us, I am sure you will want to join me in expressing our thanks to our executives and employees for achieving these successes.

IMPORTANT CONTRACTS SHIPPING and SHIPBUILDING

Deltics for Bass Strait Ferry

TURBOCHARGED Napier Deltic 18-cylinder high-speed lightweight diesel engines have been ordered for a 3,810-ton twin-screw vehicle and cargo ferry by the Australian Shipbuilding Board for the Australian National Line. Each of the two engines will be coupled to a Stone-KaMeWa reversible controllable-pitch propeller through a Vulcan-Sinclair scoop-controlled fluid coupling and an Allen-Stoeckicht epicyclic reduction gearbox. The combined six-hour rating of the two Deltics is 4,300 s.h.p. and at the vessel's maximum service speed of 15 knots they will deliver 4,000 s.h.p. The 295-ft. long ferry is being built for service between Australia and Tasmania.

New Dredgers for North Eastern Waterways

British Waterways has placed an order with Fleming and Ferguson, Limited, Paisley, for five diesel-driven bucket dredgers for use on the Aire and Calder and Sheffield and South Yorkshire Navigations in replacement of four obsolete steam dredgers.

Southern Region Contracts

The Southern Region of British Railways has placed the following contracts:
Le Grand, Adco, Ltd., Southall, for trial borings and site investigation at Dover Marine Station.
Wallace and Tiernan, Limited, London, W.4, for chlorination plant for water supply at Dover Priory.
The Cleveland Bridge and Engineering Co., Limited, London, S.W.1, for reconstruction of Dragmire Lane Bridge, Balham.

Boeing Turbo-Starters Ordered

Delta Air Lines has ordered seven Turbo-Starters from Boeing Airplane Company for ground servicing of the airline's Douglas DC8 and Convair 440 jet air liners, delivery of which is scheduled to begin late this year. The Turbo-Starter is a van-mounted gas turbine compressor which supplies hot low-pressure high-flow air for ground operation of air-driven engine starters and aircraft pneumatic systems. It can also be used to remove snow and ice from aircraft and other equipment and to test cabin pressurisation.

Eastern Region Contracts

The Eastern Region of British Railways announces the following contracts:

The Concrete Development Co., Limited, Iver, for five precast concrete footbridges in connection with the Chingford, Enfield, Hertford (East) and Bishops Cleeve electrification.
Samuel Butler and Co., Limited, Stanningley, for part reconstruction of superstructure of bridge carrying up lines over Oundle Road, between Yaxley and Peterborough North.
Clough, Smith and Co., Limited, Crawley, for electric lighting and power installation at Sheffield (Darnall) diesel maintenance depot.
Westinghouse Brake and Signal Co., Limited, London, N.1, for supply and installation of equipment in connection with the amalgamation of Clapton Junction and Hackney Downs signal-boxes into one signalling scheme controlled from a new box at Hackney Downs Station.
Wellerman Bros., Limited, Sheffield, 3, for reconstruction and lengthening of bridge at Lea Bridge Station.
W. and C. French, Limited, Buckhurst Hill, for construction of concrete trestles, beams and raft over tracks and platforms, extension to abutment wall and alterations to footbridge at Upminster Station.

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lecon House, Theobalds Road, London, W.C.1.

Undated—Kuwait.—Ahmad Yousuf Al-Nusf and Bros., P.O. Box 78, Kuwait, is anxious to submit bids on behalf of United Kingdom firms in respect of the undated call for tenders issued by the Public Works Department for substantial quantities of mechanical plant and equipment including TRACTORS, SCRAPERS, CRANES, LOADING SHOVELS, etc. Photocopies of tender documents from Export Services Branch, B.O.T., price 25s. (ESB/29044/58.)

January 24—Union of South Africa.—Cape Provincial Administration for six petrol-engined 800-900 gal. WATER-TANK LOERIES. Tenders through local agent to the Cape Provincial Administration. (ESB/491/58.)

January 30—Union of South Africa.—Cape Provincial Administration for up to three petrol-engined VANS for 1,500 lb. payload; up to 41 petrol or diesel two-axle 12,000 lb. (41 cu. yd.) steel-bodied tipping lorries; and up to five 28,000 lb. (gross ballasted) diesel ROAD ROLLERS. Tenders through local agent to the Cape Provincial Administration. (ESB/483, 485, and 497/58.)

January 30—Greece.—Ministry of Finance for six 8-12-seat BUSES, four 33-36-seat BUSES, six v.h.f.-equipped AIRFIELD CONTROL CARS and one REFUSE COLLECTOR. Photocopies of tender documents from Export Services Branch, B.O.T., price 14s. (ESB/68/58.)

February 2—Formosa.—International Co-operation Administration for three 4 cu. yd. DUMPING LOERIES. Tenders to the Central Trust of China, Purchasing Department, 68 Yen Ping Nan Road, Taipei, Taiwan. (ESB/52097/58/ICA.)

February 5—Thailand.—Royal Irrigation Department for about 100 HEAVY-DUTY ROAD VEHICLES of various types. Tender documents available on loan from Export Services Branch, B.O.T. (ESB/538/58.)

Agency Inquiry—Italy.—The firm of Macchine Agricole Industriali Perali, Viale Cavallotti, 10, Jesi, is producing a road roller for which it is seeking a suitable diesel engine. In addition the Italian concern is interested in taking up the agency of a United Kingdom manufacturer not already represented in Italy. (ESB/31377/58.)

New B.P. Tanker Company

A NOTHER joint tanker operating company has been formed under the auspices of the British Petroleum Co., Limited. The other partner is Houlder Brothers and Co., Limited, and the title of the new company will be the Warwick Tanker Co., Limited. It will take over contracts already arranged by B.P. for the construction of two tankers of 35,000 tons deadweight, to be built by Hawthorn Leslie (Shipbuilders), Limited, Hebburn and Cammell Laird and Co. (Shipbuilders and Engineers), Limited, and expected to be delivered in March and July, 1960, respectively, which will be chartered to the B.P. Tanker Co., Limited. The cost of the vessels will be financed partly from the resources of the company and partly by means of bank facilities and an issue of 6½ per cent first mortgage debenture stock.

Fixed Abode for "Passat"

THE four-masted sailing ship *Passat*, sister ship of the *Pamir*, which went down in an Atlantic hurricane in September, 1957, with a crew of 80, has taken her first 35 trainees as an anchored training ship at Hamburg.

Fishguard—Waterford Service

IT was disclosed at a Waterford meeting on January 8 that the passenger service maintained by the B.T.C. vessel, *Great Western*, between Fishguard and Waterford is to be discontinued. She is to be converted to convey containers and/or unaccompanied motor traffic in addition to the present cargo and livestock traffic. For an experimental period of two years, three sailings per week of the reconstructed vessel would be maintained, the position to be reviewed towards the end of this period. The annual loss on the service over the past three years has been £50,000.

Large Tankers Ordered

IN consequence of the decision to build the Rotterdam Europort, with its capacity for very large tankers, Esso Nederland N.V., of The Hague, and the parent company, Standard Oil Company (New Jersey) have placed orders with Verolme United Shipyards for three tankers of 73,000 tons d.w. At the same time they have cancelled orders for four tankers of 47,000 tons, three of which were to be built for Standard Oil and one for Esso Nederland. Standard will operate one and Esso Nederland two of the 73,000-ton tankers. They will be constructed in the large building dock at the Rozenburg yard, which has a capacity for vessels up to 110,000 tons. This dock is on the point of completion.

New Transit Shed for Southampton

A NEW single-storey transit shed is to be provided at quay 26 and 27, Empress Dock, Southampton (B.T.C.-owned) in replacement of two sheds which were destroyed by enemy action during the war. The restoration of transit shed facilities at this quay will avoid the unnecessary use of deepwater berths elsewhere in the port and will encourage the development of additional traffic for Empress Dock. The new shed will be 725 ft. in length, 95 ft. wide, with an adequate roof height to allow the use of mechanical handling appliances. The work will include a rearrangement of rail tracks on the quay and the provision of a platform at the rear of the shed for the loading and unloading of rail and road vehicles.

FINANCIAL RESULTS

NOTES on the trading results, dividends and financial provisions of companies associated with the transport industry are contained in this feature, together with details of share issues, acquisitions and company formations or reorganisations.

Avon India Rubber

The Avon India Rubber Co., Limited, earned a group profit for the year ended September 27, 1958, of £302,488 (£376,476) after taxation. Net profit of parent was £299,651 (£371,448) and ordinary dividend for the year is 11 per cent.

Westinghouse Brake and Signal

Group trading profit of the Westinghouse Brake and Signal Co., Limited, for the 52 weeks ended September 27, 1958, was £2,035,101 (£2,143,466) after depreciation. After interest and tax this is reduced to £879,235 (£906,351). Net profit of parent was £560,818 (£554,870). Ordinary dividend 10 per cent (same).

Lambretta Offer for Trojan (Holdings)

The directors of Trojan (Holdings), Limited, are recommending to shareholders acceptance of an offer on behalf of Lambretta Concessionaires, Limited, for the entire ordinary 8s. capital at the bid, per share. It is explained that, for want of working capital, it has been impossible to achieve the necessary turnover to sell the Trojan goods vehicle in a highly competitive market. Manufacture will continue under the new ownership.

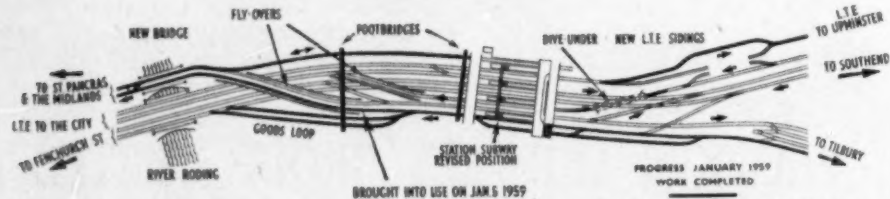


Diagram showing progress on new works at Barking, Eastern Region (L.T.S.) and District Line, including up flyover brought into use on January 5 and other new track arrangements; temporary connections by which services are maintained at present are not shown

B.T.C. TRAFFIC RECEIPTS: PERIOD NO. 13—1958

	Four weeks to December 28, 1958			Aggregate for 52 weeks		
	1958 (£ thousands)	1957	+ or -	1958 (£ thousands)	1957	+ or -
PASSENGERS						
British Railways ...	9,723	9,536	+ 187	137,654	138,563	- 909
London Transport ...	1,819	1,765	+ 54	24,228	23,087	+ 1,141
Railways ...	4,022	4,316	- 294	48,506	59,169	- 10,663
Road Services ...	4,102	4,154	- 52	59,720	57,558	+ 2,162
Provincial and Scottish Buses ...	270	302	- 32	6,878	6,879	- 1
Ships ...						
Total Passengers	19,936	20,073	- 137	276,986	285,256	- 8,270
FREIGHT, PARCELS AND MAELS						
British Railways ...	6,385	6,869	- 484	92,054	106,788	- 14,734
Merchandise and livestock ...	3,328	3,856	- 528	44,914	53,310	- 8,396
Minerals ...	9,284	9,912	- 628	121,668	127,588	- 5,920
Coal and coke ...	3,971	3,903	+ 68	51,761	51,220	+ 541
Parcels, etc., by passenger train ...	948	947	+ 1	12,389	13,339	- 950
Collection and delivery, etc. ...						
Total Freight British Railways	23,916	25,487	- 1,571	322,786	352,245	- 29,459
Others ...	3,871	3,899	- 28	54,464	55,291	- 827
Total Freight, Parcels and Maels	27,787	29,386	- 1,599	377,250	407,536	- 30,286
Aggregate	47,723	49,459	- 1,736	654,236	692,792	- 38,556

Comparisons are affected by increases in rates which have been authorised from time to time, by the provincial and Scottish bus strike from July 28 to 28, 1957, by the London Transport road services strike from May 5 to June 20, 1958, and by the restrictions in oil supplies which operated from November 7, 1956, to May 14, 1957

BLACKPOOL CHOOSE ALHAMBRINAL

Permanent Interior Decorative Panelling EXCLUSIVELY



EVERY BLACKPOOL CORPORATION BUS, TRAM AND TRAILER IS FITTED THROUGHOUT WITH ALHAMBRINAL ROOF PANELS, BODY PANELS, SIDE PANELS, SEAT BACKS

"ALHAMBRINAL," the permanent decorative interior panelling, is extensively used for the lining of ceilings, under-racks, body panels and seat backs in motor coaches, buses, trolley-buses, tramcars, railcars and railway carriages. "ALHAMBRINAL" is produced in a wide variety of designs and colours which are solid throughout. It is practically indestructible under ordinary conditions of wear. It is light in weight, non-inflammable, non-corrosive and a non-conductor of heat or cold. It is ready to fix and can be supplied on aluminium, hardwood or plywood backing, cut to sizes and ready to erect

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GRAMS: "WATERPROOF" BARRHEAD



"Assure me, dearest Matilda, it was all an evil dream"

"Oh villainy most vile!" With this wild eldritch cry Egbert started from his pillows. Matilda, hurrying to his side, pleaded with him to disclose the cause of such piteous perturbation.

At length, with many a sigh and groan, Egbert gasped, "Driving upon a dark and lonely road, I was of a sudden set upon by footpads and thieves who seized me, hurled me viciously into the roadway and drove off with joyous laughter, mindless of my plight. Even now those dastardly wights are reaping the fruits of

my labours, enjoying my engine's surging power as it makes mock of the direst hill, burning away my precious fluid!"* Overcome with anguish, he could say no more. "Courage, my brave Egbert!" Matilda resolutely entreated him. "You are here, in your own bed, Egbert. You have but dreamt this calamity."

Hope battled with despair in Egbert's face. Clutching her hand in his troubled grasp, he breathed, "Assure me yet again, dearest Matilda, assure me it was all an evil dream."



* The finest quality Derv—BP Derv—is available at Agency sites throughout Britain. With a Shell and BP Derv Agency card your drivers can fill up with BP Derv on credit or for cash at agency rates. The sign on the right is the sign they should look for.

